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# East Europe Report

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22 APRIL 1986

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

SCIENTIFIC LABOR ORGANIZATION IN BEZIRK-MANAGED COMBINE

East Berlin SOZIALISTISCHE ARBEITSWISSENSCHAFT in German Vol 29 No 6, 1985  
pp 416-22

[Article by Rudolf Hempel, Dr of Economics, scientific assistant with the Central Research Institute for Labor; State Secretariat for Labor and Wages.  
Original title: "Direction and Planning of Scientific Labor Organization in the District-Directed Combined Works".]

[Text] The comprehensive implementation of the WAO [Scientific Labor Organization] in the context of complex socialist rationalization calls for an effort to make sure that it will be accomplished in a planned fashion also in the bezirk-managed combine. The observation of three tasks that are closely connected with each other is an essential requirement here.

1. The mastery of the WAO in terms of management and its complete inclusion in enterprising planning.
2. The firm involvement of the workers in the accomplishment of the tasks of the WAO.
3. On-going basic and advanced training of the supervisory personnel required for the creation of a corresponding quality level in the field of the WAO.

These factors assume growing significance because of the large number of small-sized and medium-sized enterprises, the manifold applied technologies and produced products, as well as the progressing interlocking development of combine enterprises within a bezirk-managed combine.

Existing experiences of the centrally-managed combines were used in the investigation of the process of involving the WAO in the management and planning of bezirk-managed enterprises and combines and specific solutions were worked out in keeping with the special features of the bezirk-managed industry. These specific solutions were tested successfully through close cooperation with the economic council of Bezirk Dresden in the Dresden Praecitronic Combine VE [state-owned] and they were recommended for practical application to other bezirk-managed combines.

The planning of WAO measures is an essential component of management activity in the field of the WAO. Here it proved to be basically practical to derive the WAO tasks directly from the intensification and rationalization concepts of the combines and enterprises. The actual drafting of a WAO concept then appears to be recommended in the light of these basic documents for conceptual plan preparation in each bezirk-managed combine and, derived from that, in each structure-determining combine enterprise. Since it is a component of the science and technology plan portion, this WAO concept must be coordinated with the "Long-term Concept for the Employment and Better Utilization of the Social Labor Capacity" (in terms of manpower recruiting and job economizing), the working and living conditions plan portion (in terms of the improvement of the material working conditions), as well as the activities plans aimed at increasing shift work and at the reduction of hardships and hazard exposures which are due to working conditions and it must then be drawn up for a five-year plan.

A detailed general part of the concept contains the target directions and investigation areas of WAO work, task allocation, structural questions, and rough orientation with respect to the index figures for a period of 5 years in the bezirk-managed combine as well as a part of the essential parameters and tasks to be spelled out in detail each year. It is recommended that the following index figures be established:

Current Year		Plan Year	
Estimated	Actual Figure	State Task	Plan Draft

a) Work time saving due to WAO measures (Th [theoretical ?]), total,

Including time saved in the following technological steps:

Main production processes,

Auxiliary production processes,

b) Number of existing job slots (blue-collar workers and white-collar employees, total),

Including production personnel, management and administration;

c) Number of jobs saved, total,

Including production personnel, management and administration;

d) Jobs that were reorganized or newly established, total;

e) Number of workers obtained for new tasks, total (persons), including for:

New tasks in the enterprise and in the combine's enterprises, total (relative gain),

For increased utilization of production assets,

For expansion of rationalization equipment construction and of R&D potential,

For increase in consumer goods production,

Tasks in other enterprises and combines in the territory (absolute gain);

f) Work stations at which exposures appeared, total (number);

g) Exposed workers, total (number);

h) Workers at whose work stations exposures entailing health hazards are being reduced (in case of several exposures) or are being eliminated;

(Broken down by types of exposure and exposure level).

These index figures must be coordinated with the state reporting system.

The annual tasks must be planned in the light of the main directions of the WAO, they must be broken down into individual measures and they must be organized as follows:

1. Complex WAO measures,
2. Introduction of type solutions of the WAO,
3. Development of manual work processes,
4. Improvement of labor and production organization,
5. Tasks aimed at the improvement of material working conditions, including elimination of hazards at exposed work stations.

Tasks involving work classification and drafting new work standards and performance indexes should be an integral component of all measures.

Figure 1 illustrates the interrelationships involved in the planning of WAO measures. This creates the conditions for planning all required personnel and material-technical prerequisites for demanding WAO work.

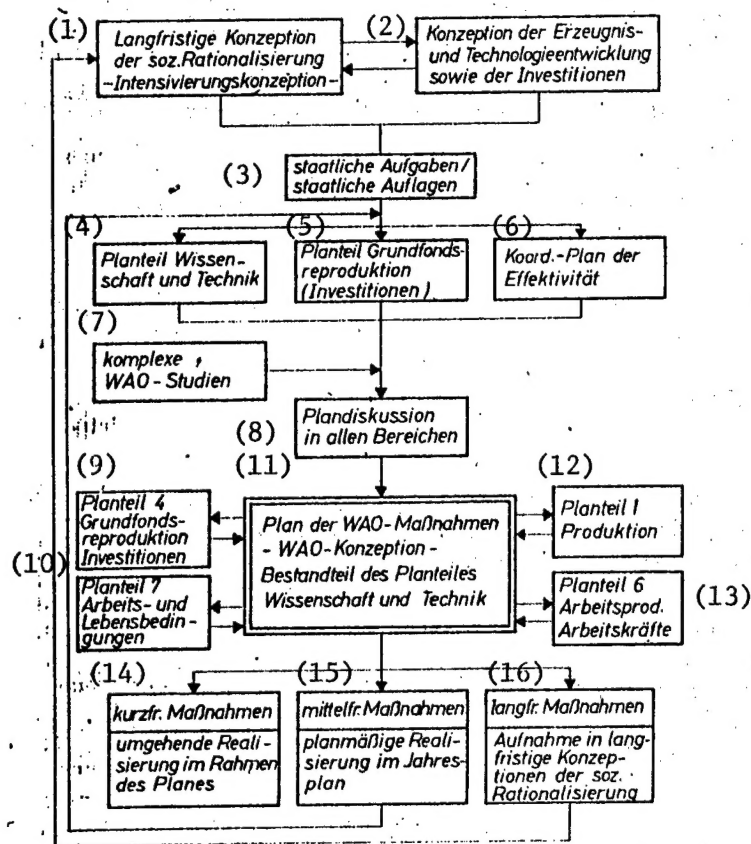


Figure 1. Planning WAO Measures

Key:

- |  |   |
|--|---|
| 1. Long-Term Concept of Socialist Rationalization, Intensification Concept | 9. Plan Portion No 4, Basic Assets Reproduction Investments                             |
| 2. Concept of Product and Technology Development as Well as Investments    | 10. Plan Portion No 7, Working and Living conditions                                    |
| 3. State Tasks, State Requirements   | 11. Plan of WAO Measures, WAO Concept, Component of Science and Technology Plan Portion |
| 4. Science and Technology Plan Portion                                     | 12. Plan Portion No 1, Production   |
| 5. Basic Assets Reproduction (Investments) Plan Portion                    | 13. Plan Portion No 6, Labor Productivity, Manpower                                     |
| 6. Effectiveness Coordination Plan   | 14. Short-term Measures, Immediate Implementation in Context of Plan                    |
| 7. Complex WAO Studies   | 15. Medium-term Measures, Planned Implementation in the Annual Plan                     |
| 8. Plan Discussions in All Areas   | 16. Long-term Measures, Inclusion in Long-term Concepts of Socialist Rationalization    |

Regarding the complex implementation of the WAO, it has proved to be practical to build up an efficient WAO structural unit in the parent enterprise of the bezirk-managed combine; that unit takes care of the combine's planning, coordination, implementation, and accounting of the WAO tasks. The following tasks are main points in the work of this structural unit:

Drafting the WAO concept and forwarding of state norming points to the combine enterprises;

Planning accounting of index figures and measures in dealing with the economy-managing agency;

Guidance of the WAO officers of the combine enterprises as well as the WAO technical cadres in the production-preparing divisions;

Conduct of WAO analyses, including the drafting of work process development and classification documentation;

Planning and coordination of the drafting and introduction of enterprise and above-enterprise standards and indexes of work performance as well as manpower standards for specific branches;

Implementation of the formation as well as guidance and support of WAO teams;

Organization of above-enterprise experience exchange and performance comparisons on optimum technologies, progressive work methods, wage forms, as well as results derived from work with work performance standards and index figures;

Implementation of labor-hygiene norms and reduction of factors that are hazardous to health and that make work more difficult;

Cooperation with above-enterprise institutions (product group, AWZ [Zwickau Automobile Plant], advanced schools).

The implementation of the WAO however is not the sole mission of the WAO structural unit; it calls for interdisciplinary cooperation; this is because each sector must accomplish specific tasks.

Because of the size and structure of the combine enterprises of bezirk-managed combines, not every enterprise can assign a full-time WAO officer; this is why it has been found practical to assign WAO case workers to support the plant manager. These aides should be politically experienced cadres who enjoy respect and authority and who have a high level of technical knowledge in the field of the WAO as well as in classification and standardization; if at all possible they should have a measurement license to measure harmful substances or they should be ready to take advanced training to obtain such a license.

Here are the tasks assigned to the WAO case workers in the combine enterprises:

The index figures specified for the enterprise must be broken down on the basis of the combine's WAO concept and they must be documented with the help of accountable measures in coordination with the enterprise manager; these measures become a component of the Science and Technology Plan Portion; they must be checked and accounted for.

Act as partners of the enterprise manager in all matters concerning the WAO as well as in the introduction of output-pegged wages in the enterprise.

Guidance of leaders of WAO teams all the way to the suggestion of advanced training measures and organization of experience exchange.

Timely and comprehensive involvement of all workers in conjunction with the appropriate state managers when it comes to the planning and implementation of WAO measures.

It is furthermore necessary to integrate trained WAO technical cadres into the production-preparing sectors, that is to say, research and development, technology, project planning, and rationalization equipment construction so as to carry out the specific assignments of the WAO in these sectors (see R. Hempel, "Inclusion of WAO in Rationalization of Bezirk-managed Combines," SOZIALISTISCHE ARBEITSWISSENSCHAFT [Socialist Labor Science], 1985, No 5, p 333). In this process, it is necessary to work out and apply labor-science requirements in connection with the development and improvement of products, methods, and technologies as well as the design of workplaces and processes so that they may take effect in future work processes. For example, each production preparation should include work with specific labor-science requirement images and their practical implementation during the course of development work. In this process, the parent enterprise's WAO group leader performs a guidance function, as in the case of the WAO case workers. Figure 2 illustrates a proposal for a possible integration and subordination of WAO technical cadres in the bezirk-managed combine.

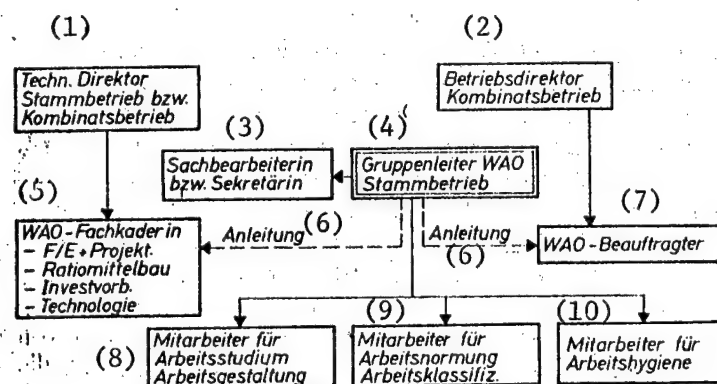


Figure 2. Structural Integration of WAO Technical Cadres in a Bezirk-managed Combine (Proposal)



Key:

- |  |  |
|--|--|
| 1. Technical Manager, Parent Enterprise or Combine Enterprise  | 6. Guidance                                      |
| 2. Enterprise Manager, Combine Enterprise  | 7. WAO Case Worker                               |
| 3. Female Desk Officer or Secretary  | 8. Aide for Work Study and Work Design           |
| 4. WAO Group Leader, Parent Enterprise   | 9. Aide for Work Norming and Work Classification |
| 5. WAO Technical Cadres in R&D + Project Planning Rationalization Equipment Construction Investment Preparation Technology | 10. Aide for Labor Hygiene                       |

The establishment of WAO teams in all sectors proved to be practical in supporting the work of these WAO structural agencies and with regard to the broad involvement of the workers in the rationalization process. The implementation of management with proper staff support is important here in keeping with the lessons learned at Schwedt. The establishment of a WAO staff is recommended to the combine management, parent enterprise, for the coordination of tasks.

The WAO staff, which consists of managers on the first management level, the party secretary, the plant labor union executive board chairman, and the WAO group leader, is responsible primarily for drafting the basic work directions and goals of complex rationalization in the enterprise. The determination of main effort tasking for WAO teams of the management sections as well as checking on the accomplishment of these tasks are functions that are connected with this. The technical managers have the assignment of specifically spelling out these proposals regarding tasking for the WAO teams. In larger enterprises, it is recommended that a management sector WAO activ be established for this type of work.

The WAO teams are organized in the individual management sectors. They support complex socialist rationalization through their broad-ranging effect. In keeping with the size of the enterprise and the divisions, it is possible to form several WAO teams in one particular management sector. The formation of interdisciplinary WAO teams has proved to be practical in the accomplishment of cross-section tasks. The procedure is similar in the case of the combine enterprises. Typical WAO assignments for a target-oriented effort on the part of WAO teams were illustrated by Feig and Waldenburger (see R. Feig and M. Waldenburger, "Lessons Learned by and Operating Procedure of WAO Teams," publication series AUS DER PRAXIS--FUER DIE PRAXIS [from Practical Work for Practical Work] No 12, Dresden ZFA [Central Labor Research Institute] 1984).

Work with WAO teams is absolutely required for complex socialist rationalization because of the personnel manning of the preparation divisions in

small and medium enterprises. The tasks assigned to the WAO teams differ here in accordance with the differentiated conditions. But each manager should establish a permanent WAO team in his management sector and should assign current tasks to that team. Lessons learned by centrally-managed enterprises show that WAO teams--when directly involved in analyses, projects, and plans of measures--considerably helped attain the enterprise targets.

The personnel makeup should be so selected that it will, first of all, facilitate the operation of this team as an advisory body for the appropriate state manager and, besides, as an executive team employed in the implementation of WAO assignments. Key points consist of cooperation.

During the stage of planning assignments and targets of socialist rationalization (intensification concept, WAO concept, Science and Technology Plan);

During preparation, especially regarding the analysis designed to discover reserves and the design of processes to be rationalized;

In the practical implementation of rationalization measures and innovation processes with the objective of improving the flow of production and reducing idle time and down-time, making work easier and safer, economizing on job slots, and perfecting work methods.

WAO teams should not have more than between five and eight members. The appropriate technical manager should at the same time be the leader of the WAO team and should shepherd this team from task assignment all the way to practical implementation. The conclusion of WAO agreements between the WAO team and the enterprise manager has proved to be a good idea; the results of such agreements must be justified before the management team.

In addition to the full utilization of in-house rationalization possibilities, it is recommended that small and medium enterprises of bezirk-managed combines make use of territorial reserves. Following the Stassfurt example, support from "WAO--Territorial Rationalization" working groups of the councils of the cities, city-boroughs, and kreises constitutes an advantage especially for these enterprises. The objective of these working groups--which resides in supporting the enterprises so as to increase labor productivity and to step up the production of export and consumer goods--is attained through an increase in the degree of mechanization and automation coupled with a simultaneous improvement of labor and production organization in main and secondary production processes as well as in the working and living conditions of the workers. These working groups face the task of providing support with regard to the utilization, primarily, of in-house rationalization possibilities with the involvement of the cooperation association as well as the territorial interest communities. The working groups consist of experienced WAO cadres and technologists from the enterprises and the scientific installations of the territory. The management of this process by the chairman of the kreis council facilitates immediate coordination in the establishment of additional working groups for territorial

rationalization, for example, "chief mechanics" and "basic assets economy," as well as the "Rationalization Aid" Cooperation Community.

A high skill level among cadres in this field is an essential prerequisite for the implementation of the WAO. Analyses in the enterprises of the bezirk-managed combines showed that, on the one hand, the necessary or already existing WAO structural organs are not adequately staffed in qualitative terms whereas, on the other hand, the present skill level of the managers, the technical-economic advanced-school and technical-school cadres and technical specialists as well as all other workers in the field of the WAO is not enough to accomplish scientific labor organization tasks in a highly effective manner. The bezirk-managed combines have few labor-science cadres in the combine management, while most of the individual enterprises do not have any such cadres.

The goal-oriented labor-science basic and advanced training of cadres in the enterprises of the bezirk-managed combines for the purpose of accomplishing the comprehensive tasks must therefore become a firm component of management activity. This makes it necessary, on the one hand, to give WAO basic training courses for specialists and, on the other hand, to impart labor-science discoveries to managers and engineer-technical cadres (foremen, technologists, project planners).

Close cooperation with the KDT [Chamber of Technology], with technical advanced schools and institutes proved to be practical with respect to basic and advanced training. Basic training measures must be planned in cooperation between the management sector responsible for scientific labor organization and the cadre and training manager. The following possibilities exist here, among other things:

Basic training for seasoned skilled workers to become work organizers;

Training courses for enterprise managers and management personnel at the industry branch academies and at institutes of socialist economic management on basic issues of WAO work management and planning;

Advanced training programs given by the KDT (for example, scientific labor organization in management and administration, work classification, process analysis, labor-hygiene complex analysis);

Postgraduate study for advanced-school and technical-school cadres in the field of labor economy and work design;

Basic training for the "manual work process design" method.

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ECONOMY

GERMAN DEMOCRATIC REPUBLIC

CONSTRUCTION INDUSTRY PLENARY SESSION OUTLINES OBJECTIVES

East Berlin ARCHITEKTUR DER DDR in German Vol 35 No 1, Jan 86 pp 3-5

[Excerpt from report by Prof and Graduate Engineer Ewald Henn, full member of the GDR Building Academy, director of Institute for Residential and Social Construction, to the Fiftieth Plenary Session of the GDR Building Academy]

[Text] The Eighth Construction Conference, held by the SED Central Committee and the GDR Council of Ministers, recorded the impressive results so far achieved in the fulfillment of the housing construction program. We realize that these results represent an excellent performance by our socialist society, accomplished thanks to the prudent leadership of the party of the working class.

By the new construction and modernization of 2.4 million housing units in the relatively short period of 15 years since the Eighth SED Congress, housing conditions have noticeably improved for more than 7 million citizens. At more than 400 housing units per 1,000 residents and 28 square meters average living space per person, the GDR has achieved an internationally respectable standard. Considerable progress has been recorded in the increase of the proportion of qualitatively well equipped homes. Since 1971, for example, the proportion of housing with bath or shower has risen from 39 percent to 74 percent, with constant hot water supply from 25 percent to almost 70 percent. Our republic holds a top ranking with regard to the equipment of residential districts with community facilities for the education and training of children as well as for the care and supplies of all citizens.

The clear strategic orientation to the extensive industrialization of housing construction has yielded excellent results. This applies in particular to slab construction and its further scientific-technical development in the form of the housing construction series 70.

Construction of a multistory building with 40 apartments in the GDR takes 65 days on the average; the best value is 40 days. Hourly costs are about 15 percent and the use of reinforced steel is about 10 percent less than for comparable construction methods in other developed industrial countries.

A lot happened as the result of the resolute implementation of the Tenth SED Congress resolutions with regard to the fundamental change in construction

tasks due to the deepening of intensification. Since the beginning of the 1980's, this has definitely expanded the social dimension of the housing construction program. The "principles for the socialist development of urban planning and architecture in the GDR, adopted by the SED CC Politburo and the GDR Council of Ministers in 1982, have come to life.

Nowadays the progress achieved is quite evident to all in most cities and villages by way of modernized buildings and homes, even entire streets, as well as by new buildings that have closed local gaps.

No doubt, the reconstructed or modernized urban areas such as the city centers of Gera, Wismar, Arnstadt and Hildburghausen, or the new buildings in old cities such as Rostock, Cottbus and Potsdam or old city districts of Greifswald, Torgau and Quedlinburg (to mention only a few) have helped to arouse and develop among our citizens a lively interest in the architecture, history and future of their cities.

These progressive trends are increasingly evident in the appearance of the capital of our republic. More than 100,000 housing units have been constructed and modernized. A new city district, Marzahn, arose with more than 58,000 apartments--the dimensions of a large city.

Reconstruction and modernization provided a new environment in the traditional working class districts of Prenzlauer Berg, Friedrichshain and Center. In the course of creating the Marx-Engels Forum and, especially, the Ernst-Thaelmann Park, significant advances have been made in the comprehensive preparation and realization of housing construction in inner city residential districts.

As you know, we are to construct or modernize more than 1 million more housing units in the next 5-year plan period, 164,000 in the capital, Berlin, alone. The proportion of inner city construction is to be raised to an average of 50 percent and, in 1990, will amount to at least 60 percent of new housing construction. Repairs are to be carried out for a total of 1.8-2 million housing units, with special emphasis on roofs and chimneys.

To meet these ambitious objectives by 1990, we urgently need to successfully and widely apply well tested scientific-technical knowledge and rapidly transfer new such findings.

The general concept for the development of housing construction, submitted to the Eighth Construction Conference, has set the decisive targets for building research. To be derived therefrom are the concrete tasks for the achievement of top scientific-technical performances with the greatest impact on the actual work of construction in terms of economic efficiency and quality of design.

#### On the Further Intensive Development of Cities and Villages

Our country boasts an extensive building stock of great material and cultural value. There is no reasonable alternative to the maintenance, cultivation and

increase of this stock by way of intensive development.

It is therefore imperative to fully exploit all possibilities for inner city construction. In other words, we need to concretely study intensive development for every city and establish the priorities and sequence of reproduction measures in terms of their sociopolitical and economic efficiency. Urban planning research must therefore focus on the improvement of the comprehensive functional efficiency and quality of the city as a whole.

We are primarily concerned with improving living conditions in the existing urban residential districts and providing a satisfactory home environment. That is to be achieved mainly by purposeful modernization and repairs, the provision of social facilities where necessary, as well as the unavoidable replacement of dilapidated building stocks. The Building Academy will therefore prepare a "comprehensive guideline for urban planning and the improvement of residential districts in the 1986-1990 5-Year Plan period," to be completed for submission to the Eleventh SED Congress. Building research developed an EDP backed procedure (ORF) to arrive at the optimum forms of reproduction for residential buildings. It is just now being tested in Berlin and will be supplemented by 1987 by more elements, including the graphical representation of planning results.

Much attention is due the development of the central inner city districts of cities, because the problems to be solved increase with the complexity of functions. Local residents will continue to like living in the central areas due to their vicinity to work centers, central cultural, commercial and other facilities. Commencing next year, building research will therefore draft concrete recommendations, standard values and model plans for selected cities in order to incorporate the strengthened housing construction measures in inner city districts in terms of function and design, coupled with consideration for areas of cultural and historical value.

Studies carried out by the Building Academy in Berlin, Halle, Magdeburg and Dresden demonstrate the benefits of retaining and reconstructing nonintrusive industrial and commercial enterprises in existing residential areas. Research on the purposeful connection of jobs and housing is still being pursued and, by 1987, will be generalized in the form of recommendations and standard values.

Long-range conceptual work and, in particular, the ongoing improvement of general building planning and local planning conceptions for rural settlements represent important preconditions for the lasting guarantee of the socially and economically efficient development of cities as well as the most rational use of available construction capacities. We are therefore further deepening our interdisciplinary collaboration with other branches of the national economy. We also aim to anticipate the completion by March 1986 of the "basic line for the precise definition of general construction planning in the period 1986-1990."

At the same time, our research capacities are drafting substantial bases for urban master plans. To make planning processes better manageable at all

levels, a computer backed and dialogue oriented graphical process is being developed and gradually introduced in the construction industry, in close cooperation with the offices for regional planning and urban construction.

All earlier experiences clearly show that inner city construction can be successfully realized only if an adequate urban infrastructure is available, or the necessary prerequisites can be provided by reconstruction and expansion. To minimize the cost of site preparation in steadily more difficult inner city conditions, maintain traffic and technical supplies in the construction areas and improve the capacities of networks and facilities, we need to aim for greater mandatory force and long-range implications. Effective measures for improving the technological standard are being drafted by joint efforts of combines for building research, the research facilities of water management, energy suppliers, the GDR Postal Service and the transportation system. Suitable diagnostic procedures for the accurate definition of the situation, condition and capacity of managements are to be provided by 1987 at the latest the proper conditions for the economical use of existing and newly developed rehabilitation processes, in particular for sewage pipelines. The use of the on-site computation procedure developed by the Building Academy, for example, helps to reestablish the capacity of the existing sewage networks and raise their capacity by as much as 10-15 percent.

The technological standard of storage and sewage treatment facilities must be substantially raised in order to provide better prerequisites for stable supplies of potable water to medium and small cities as well as for harmless sewage removal. As the result of the tests conducted with respect to the pit biotechnology jointly developed by the Building Academy and the water management agency for the construction of sewage treatment plants, the costs of materials and construction will drop in 1986 by 50-60 percent compared with earlier similar sewage systems.

As regards the expansion of the municipal engineering network and in addition to the development of design and technological processes using domestic raw materials, the emphasis is on the introduction of equipment for laying utility lines without digging up the entire street. Such methods will enable us to achieve a 30-35 percent reduction in construction costs.

The improvement of urban living conditions is increasingly affected by the increased efficiency and attraction of public passenger transportation and the gradual settlement of parking problems, in particular in the heavily traveled central districts of large cities. Extensive construction measures are needed to safeguard the operational efficiency of the transport facilities.

On the basis of earlier experiences relating to inner city construction, we may note the following: Provided there has been prudent site selection and provided planning looks to the future and observes suitable sequences, inner city construction is more economical than construction on the outskirts of the city.

Analyses compiled in cooperation with housing construction combines, city and kreis construction enterprises as well as local state organs show that it is



possible to substantially cut costs with regard to the provision of some social and technical infrastructures if buildings are put up in the city rather than on undeveloped sites.

Following an investigation of eight locations in Berlin, Karl-Marx Stadt, Erfurt, Gera, Halle and Leipzig, it was shown that the average cost of social facilities amounted to half the percentage earmarked in the complex normative. The investigations also revealed that the recurring costs of the maintenance and management of the technical infrastructure related to new inner city housing construction were significantly lower than those incurred by housing construction on undeveloped sites. Related to the above projects, average ordinary costs were about M2,000 less per unit and year.

Inner city construction as a solid element in complex housing construction can proceed only within the framework of the total normative fixed for the respective district. Any additional spending needed for the construction of residential buildings on inner city sites must be compensated by savings in other spheres. The implementation of the housing construction program does not permit any other approach.

Studies carried out locally disclose that the reasons for excess costs are to be almost exclusively to be found in local adjustments. Other factors raising costs are due to technical and production organizational inadequacies that result in construction delays. It is therefore imperative to improve management research, especially for the purpose of a constant analysis of cost developments in inner city construction.

#### On the Maintenance and Modernization of the Building Stock

In the years to come, the implementation of the housing construction program will be increasingly decided by our success in promoting the maintenance and modernization of the existing building stock. We need to maintain 6.9 million housing units, and many require repairs or modernization. Until 1987 we must focus on the quick rehabilitation and renewal of about 25 percent of the entire roof area in the GDR, roughly 40 million square meters. By 1990 we need to modernize the kitchen/bath/toilet areas of about half a million apartments in urban multifamily buildings.

In the process of carrying out the Politburo decisions on the improvement of the performance and efficiency of the kreis managed construction industry, the application of basic engineering principles relating to roofs, facades and modernization as well as the deployment of special brigades for chimney rehabilitation and structure drainage achieved increases in performance on the order of 50-60 percent in the past 2 years.

The performance comparison of the more than 2,300 technological items reveals that considerable differences persist in the standard of production. The development of reserves by the comprehensive use of best solutions would facilitate another 20-30 percent performance improvement.



To help the realization of the roof repair program, the Building Academy is working on technical solutions for hard and soft roofs, designed to ensure the year round and steady use of available capacities, including shift operation. This is to allow the greater utilization of equipment, a 12-14 time turnover of scaffolding per annum, an annual 6-8 percent rise in productivity and an at least 20 percent cut in construction times. In cooperation with the Elsterwerda Concrete Works, the Building Academy is developing delicate, light and manually mountable components, made of fine grain concrete, for purlin, couple, Berlin and Mansard roofs and to be used to reconstruct the roofs. Compared with reinforced concrete designs, the mass/performance ratio is thereby improved by 50-60 percent.

As regards the modernization of residential buildings, research concentrates on such key issues as ensure the most stable and satisfactory contribution to at least 40 percent performance growth by 1990. Construction times in the kitchen/bath/toilet area, for example, must be substantially cut and specific labor time lowered to 250 hours on the average. This will keep as short as possible the inconvenience to residents during the modernization of their homes and buildings and, at the same time, ensure economical construction. Wet processes must be reduced as much as possible by the design development and use of industrially prefabricated semifinished items and construction components such as partition walls, floors, sanitation facilities, ventilation components, and so on. At the same time we must proceed to the comprehensive complementation, fitting and joining features of the components, the development and availability of the respective rationalization aids as well as ready-made and user friendly materials for improved insulation.

From 1986 on, the cement combine will make available to the construction industry and citizens' own initiatives new product ranges of insulating materials from domestic primary and secondary raw materials.

The planned maintenance of industrially assembled residential buildings is gaining increasing importance. In the coming years, we will have to double or even triple building services for such maintenance. The development of processes for the repair or maintenance of sheath constructions and sanitary installations is a priority assignment for scientific-technical work in this field. Before the Eleventh SED Congress, the housing construction combines and institutes of the Building Academy will therefore draft and collect in planning catalogues new industrialized processes for the repair of roofs, joints and insulation layers as well as for the removal of damage to balconys and verandas.

Based on the standard achieved in the maintenance of the building stock and the objectively greater demands arising in the long run from the conditions of comprehensive intensification, it will be an important assignment for building research by 1987 to draft a scientific-technical conception on the planned reproduction of the housing stock through 2000. To be carried out are comprehensive economic calculations for maintenance appropriate construction and longer lived buildings, structural parts and components. The results of research into wear and tear must be included, based on diagnostic methods for testing structures. Materials from demolished buildings need to be

increasingly recycled for the purpose of the long-range evolution of materials circulation.

#### On the Improvement of the Design-Technological Standard in New Inner City Construction

The advances in inner city construction in past years evidently reveal that the social need for building in the inner cities has considerably advanced further industrialization. The results achieved in the capital, in Gera, Karl-Marx Stadt, Rostock and other districts demonstrate how to handle inner city construction economically and attractively by the slab construction method. It will now be necessary to aim for a much higher technological standard, because the full realization of the important targets for lowering construction costs and improving quality directly depends thereon. Building science must provide the prerequisites for the comprehensive application of the principles of industrialized construction in inner city residential housing construction.

Flexible technologies will allow us in future also to fully utilize the equipment in the slab plants and to limit additions to the stock of molds to the absolutely necessary minimum. Analyses of the variety of components, (increased as the result of inner city construction), have revealed that the incidence of daily retooling at the assembly lines of slab plants is multiplying. The Building Academy developed and tested a comprehensive process for the shell and retooling equipment for assembly lines, battery and tilt molds. It consists of basic shells, fastening mechanisms and supplementary moldings and has already been introduced. Retooling delays are thereby cut, specific retooling costs reduced by 35 percent and steel consumption by 1.5 per steel mold.

In addition it is imperative to raise efficiency in prefabrication by the automation of entire technological lines. The slab plant of the Neubrandenburg Housing Construction Combine is already automating operations on the prestressed concrete casing line with the aid of microelectronic process measuring and control equipment as well as sensor controlled industrial robots. This results in a 20 percent manpower saving.

Until the end of 1987, the research collectives will work on the bases for the linkage of the various units. They are therefore adopting the use of CAM systems on the basis of computer backed work places and of process control equipment by means of office computers. The comprehensive method of prestressed concrete casing production is designed to save another 30 percent of manpower, cut assembly times and lower the production consumption of cement by 10-15 percent, of process energy by at least 20 percent.

Crucial reserves for lowering costs and avoiding down time are present in the processes preparing and accompanying assembly, such as local adjustment, foundation, transportation and cooperation. The task therefore arises for technological research so to adjust the organizational principles of flow production to the construction site as to achieve the greatest possible

simultaneity and continuity of operations on the assembly line even when the process is arrhythmic--with the aim of short construction times.

Structural foundations are particularly important, because they are most subject to site specific conditions. According to our investigations, the well known and tested flat foundation types as slab strips continue to account for about 75 percent and, therefore, the majority of foundations. They are complemented by specific types of foundations such as the shaft grab procedure, slit support and ram pile foundations as well as the bore pile slab wall as the combination of single foundation and outside cellar wall.

Transport costs should be minimized by the selection and reuse of the excavated earth and debris. The basic methods for the supply of mass construction materials without intermediate storage, developed by the Building Academy for the improvement of transportation, handling and storage processes, have proved their worth and helped reduce costs. At present the Academy is working on the improvement of construction technological supplies of small volume construction materials in order to throughout realize mechanized transport chains on the basis of load units. In 1986 we will study efficient methods for the combined transportation of assembly units for construction in small and medium cities. This will allow us to utilize the energy and transport cost benefits of railroad transportation, semitrailer equipment and the container system.

The speed and efficiency of construction increasingly depend on the development of interior work. We therefore need to substantially improve production quality in prefabrication and assembly. Clean surfaces and edges of components and greater care taken in transportation and assembly would reduce the need for touching up. It is also imperative to insist on the widespread introduction of proven and efficient methods such as the mechanized surface treatment of internal walls (involving a 50 percent saving of labor time) and the ready-made system of electric wiring.

To achieve greater efficiency and productivity in interior work, prefabricated and complete system methods and ready-made interior elements of various kinds are being prepared, developed and--consonant with the material possibilities--going to be introduced from 1986 on. They are the result of cooperation between the Building Academy, manufacturers and component suppliers. It is our objective to lower the working hours expended on interior work to 190 hours per housing unit. By further developing processes and technologies, we must provide important prerequisites for meeting the rising demands on the functional, esthetic and urban-architectural design of residential and social buildings. As far as apartments are concerned, we need to focus on the perfection of their use value, to be achieved by improved functional design and a more flexible division of spaces and areas. Ground floors will be upgraded by the incorporation of social facilities. Several housing construction combines have therefore developed processes suitable for assembly at a 3.3 meter height between floors for the housing construction series 70. The Berlin Housing Combine erects cellars and ground floors in industrialized monolithic concrete construction, using universal steel frame shells. By comparison with skeleton construction, this lowers reinforced concrete use by

50 percent, cement use by 13 percent and costs in general by 20 percent. Special care must be devoted to the interior work on the uppermost floor, because this is largely affected by concrete site conditions. That is why we should further develop prefabricated flat and pitched roofs. The roof design with variably usable jamb wall components, developed jointly with the Karl-Marx Stadt Housing Construction Combine, represents a well designed industrialized procedure. In connection with the use of modern technologies, in particular sizing and smoothing equipment, high quality concrete components must be produced in order to as rapidly and widely as possible introduce uncoated roofs that require no maintenance for at least 15-20 years.

The main orientations for further developments are offered by the basic catalogue "inner city community facilities by the slab construction method--WBS 70."

Looking forward to 2000, building research must devote increasing efforts to scientific advances.

The growing demand for differentiated types of buildings and living space offering diversified urban-architectural views require us in future to produce standardized component assortments for varying buildings and site conditions instead of the present 20-30 end products. On the basis of a standardized technical policy, we will have to facilitate the availability of many combinations and the interchangeability of components of various types and sizes, and extend slab construction to almost all categories of residential and social buildings.

Fundamental studies are needed to further reduce construction costs as well as raise the life and reliability of construction materials and materials combinations on the basis of domestic primary and secondary raw materials.

To meet the energy policy objective of reducing primary energy consumption for space heating in absolute terms, we must make an intensive effort by improved insulation to lower the heating requirements per housing unit from the present 4 kilowatt to 2.5 kilowatt. Current developments for minimizing heat loss by ventilation must be speeded up so as to create the equipment needed by 1990. In addition, we need to give greater emphasis to the development of incidental energy sources for residential heating and hot water supplies.

#### On General and Construction Process Planning

The call for greater economy and better construction quality, in particular the further lowering of construction and energy costs as well as the planned improvement of labor productivity, coupled with the greater diversity of buildings, involve the need to further perfect the already effective methods of planning and production preparation. This will enable us as quickly and widely as possible by means of computers to proceed to a new qualitative level of construction preparation.

The application of the CAD method to planning and technological preparation raises labor productivity by 80-90 percent. Processing times are cut

30-40 percent. We are able to more quickly respond to changes. The optimalization of layouts by variant comparisons represent a contribution to the reduction of construction costs of up to 10 percent and is accompanied by the better quality and social efficacy of the products of construction.

According to the current status of knowledge, more than 50 percent of all necessary planning, drafting and preparatory processes may be rationalized by computerized operations and combined with CAM solutions for the control of prefabrication, transportation, assembly and construction processes.

Despite all our achievements in this field, we are still in the early stages of a very extensive and complex process which requires new ways of thinking at every work place as well as the purposeful training of cadres in all combines and scientific institutions. CAD methods largely free architects and engineers from routine work. They are increasingly able to devote themselves to creative assignments and exercise authorial control with a great sense of responsibility.

As for building research, we continue to be confronted with the challenge on behalf of the combines to develop and make available the management and planning tools required for the steadily better mastery of the many interlinked and complicated processes of the preparation and execution of construction in the cities. The perfection of the management, planning and organization of inner city construction is intended for the pursuit of the objective to carry out construction as fast as possible at a high technological standard. At the same time we must make sure by smooth flowing construction work in inhabited buildings to reduce to an acceptable minimum the sometimes inevitable disruptions and functional restrictions in the immediate vital sphere of citizens, whether in their homes, residential buildings or districts.

The Berlin construction combines and the Building Academy prepared and applied an EPD based process plan on the basis of critical path planning for the housing complex Frankfurter Allee-South, in order to guarantee the smooth and site oriented production flow of complex inner city construction measures. This takes into account the different conditions and requirements of new construction, reconstruction, modernization and repair--including municipal underground construction, green zone creation and the guarantee of easements. In this manner all measures to be carried out are coordinated in terms of both time and space. To deal appropriately with disruptions of construction work and optimize the deployment of capacities, we are currently developing and getting ready some interactive software. Display terminal interaction allows us to conduct an immediate variant computation and quickly bring construction operations up to date.

In preparation of the Eleventh SED Congress, everybody involved in construction is devotedly and enthusiastically working on the solution of the housing problem as a social issue by 1990 and on the further improvement of housing and living conditions. Building scientists contribute outstanding performances in research and development, thereby making possible the achievement of excellent economic results.

It is our firm intention by the fulfillment and overfulfillment of our 1985 plan assignments and the obligations entered into for the Eleventh SED Congress as well as skilled 1986 plan preparation to create important preconditions for the all-round realization of the challenging objectives of the Eighth Construction Conference for the benefit of our people and the strengthening of our socialist state.

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ECONOMY

HUNGARY

## ENTERPRISE COUNCILS IN FOREIGN TRADE DISCUSSED

Budapest FIGYELO in Hungarian No 6, 6 Feb 86 p 9

[Article by Ferenc Kosaras: "Enterprise Councils in Foreign Trade"]

[Text] In a manner similar to that of the other areas of the people's economy the switch to the new guidance forms is taking place in foreign trade as well. In accordance with the preliminary thinking the new leadership bodies began operation in the majority of the affected enterprises by the end of 1985.

According to the statistical listing there are now 73 enterprises operating in the foreign trade branch, operating in various organizational forms as a result of the accelerated organizational changes and new creations of recent years. In addition to the traditional specialized enterprises there are joint enterprises, subsidiaries, associations, stock companies and limited liability companies in this field.

Even with the expansion in foreign trade rights the enterprises of the branch continue to play a key role in the conduct of trade; their share in all export exceeds 80 percent. Their activity is very significant from the national economic viewpoint and, naturally, this also influences the selection of guidance forms.

Of the 27 enterprises classified as actual state enterprises and founded by the Ministry of Foreign Trade only nine enterprises, trading in strategic products or carrying out tasks of stressed national economic significance, have come under state administrative guidance. The rest will be guided by enterprise councils, and these have already been established for the larger part of the enterprises. Following the appearance, expected this year, of the new law regulating the activity of joint enterprises, stock companies and limited liability companies a comprehensive new guidance system for enterprises operating in these forms may develop.

Really substantial organizational changes are not linked directly to the introduction of the new guidance forms. Neither the enterprise collectives nor the guiding organs have initiated the creation of new, independent units. But it must be noted that within the framework of high level resolutions designating the directions for the development of the foreign trade organization and the realization of the conception worked out in the wake of



these resolutions there has been a real organizational modernization in recent years. Weighing the market conditions the enterprises are constantly establishing new branch offices and at present a number of joint enterprises, mixed enterprises operating with foreign participation, etc. are being founded.

Last year 11 enterprises formed enterprise councils. Taken together these enterprises represent considerable weight. In 1984 they conducted ten percent of all non-ruble accounting export and had a 26 percent share in ruble accounting export.

#### Few Worker Delegates

The enterprise council elections and the switch to the new guidance in general took place at the enterprises in accordance with legality and without any special problems. Everywhere the elections quickened the internal life of the enterprises.

The organizational and operational statutes, which will be of determining significance from the viewpoint of enterprise work following their adoption, were, for the most part, prepared with great care, taking into consideration the observations of the workers. But there were also examples where the preparation was not well organized and where the workers' delegates at the constituent session made so many observations that there simply was no way to discuss them.

The number of members in the enterprise councils varies between 13 and 43; in general a number around 20 is characteristic. In the majority of the enterprise councils the ratio of worker delegates to those delegated by the leadership is even; at a few enterprises the number of worker delegates exceeds by one the number of those delegated by the leadership. Thus the enterprises did not avail themselves, or did so to only a very slight degree, of the possibility that the ratio of worker delegates could exceed 50 percent.

Of the enterprise council members an average of 20 percent consists of delegates who do not have a leadership function. In agreement with the national experience the collectives at the foreign trade enterprises also are inclined, for the time being, to consider the leaders to be best suited for presenting the opinion of a section and representing its interests appropriately in the council. Obviously this judgment could change if there is an increase in the number of workers well informed and well acquainted with the affairs of the enterprise and if enterprise democracy develops as well.

For the most part the chairmen of the enterprise councils have come from among the middle leaders. It would be appropriate to elect the chairman or his deputy from among the delegates of the workers. Basic persuasive work was needed at some enterprises to do this, however, because the workers wanted to nominate the higher leaders even for these posts. But these--as leader delegates--could be recalled from the council by the director at any time, so the conditions for work would not be appropriate.



## The Task Plan

At the great majority of enterprises the person who had been director thus far was confirmed in his function--in general by a large majority--and the ministry had agreed to this in advance. In general the term of office is 5 years. A competition to win the title of director general has been put forward at two enterprises thus far. There were two candidates each at Tannimpex and NIKEX, but only at Tannimpex did the enterprise council succeed in electing the director. In the case of NIKEX repeated voting did not bring a result, so they decided to have a new competition.

In a manner similar to other branches, the enterprise councils generally raised the pay of the elected directors at the first session. This indicates that the enterprise council members have not yet felt adequately the importance of thinking in the longer term and of creating long-range interest.

At all places the enterprise councils compiled for the directors detailed task plans embracing every area of enterprise work. In these they also took into consideration the recommendations of the ministry, which stressed the necessity of achieving a few strategic goals which are important from the national economic viewpoint. For example, every task plan includes increasing export, creating the enterprise conditions necessary for this, developing more efficient forms for domestic partner contacts, and creating a flexible enterprise organization which can hold its own amidst the conditions of sharp world market competition and strengthening domestic competition.

Carrying out the tasks will require a new way of thinking not only from the directors but also from the members of the enterprise councils and it will require the adoption of new forms in ministerial guidance and in the maintaining of contacts.

The guiding work of the enterprise councils must be embodied--in accordance with the fundamental purpose of their creation--in determining the strategic goals and in working out the methods needed to achieve these goals. Every enterprise has the urgent task of working out a comprehensive market strategy adapted to the new circumstances and determining in what areas its activity should be strengthened, what new areas it wants to move into and from what areas it would be proper to withdraw.

Thinking in longer range terms and weighing the advantages which can be attained in the short and longer term must necessarily determine the way of thinking of the enterprise councils. Going beyond the working out of business conceptions and the highly significant actions determining the effectiveness of enterprise management this must also be manifested in such areas as income policy within the enterprise and providing material interest for workers and leaders.

Exercising the ownership rights is a fundamental function of the enterprise councils. At foreign trade enterprises also this requires that increasing enterprise property and generating and accumulating commercial capital should receive a substantially greater role than before in enterprise activity and that the ownership attitude should strengthen.

The present period is still characterized by preparation and a search for paths. But this should not persist too long, because the world market has no respect for the internal problems and uncertainties of the country.

#### A Grading and Requirements System

(A requirements system prescribed for the director general which was approved by the enterprise council of a foreign trade enterprise at its constituent session.)

1. Further dynamic growth of capitalist export bringing profit to the enterprise, partly by better exploitation of existing profiles and partly by developing new profiles.
2. Strengthening the activity aimed at acquiring new capitalist markets, building up a foreign market organization for this purpose as soon as possible. Working out a market development strategy for the enterprise taking these goals as a base.
3. Developing and strengthening contacts maintained with domestic partners--in harmony with what is contained in point 1--and developing strong and modern cooperation contacts with the domestic partners.
4. Constant dynamic filling of the working fund in the interest of increasing trade on the enterprise's own account.
5. Integrating representational activity into enterprise management. In the case of representational activity the harmony of national economic and enterprise interests must be continual.
6. Achieving a profit volume which will make possible the continual development of the enterprise and an increase in earnings for workers as prescribed in the national economic plan.
7. Realizing deliberate and purposeful manpower management keeping in mind that the employment of highly trained experts should become possible, especially for middle leadership and important business positions. Preparing a cadre development and replacement plan for this purpose and proposing competitions for positions.
8. Creating a record-keeping and administrative system, by introducing and using modern computer technology.
9. Improving work discipline and the internal order of the enterprise, ensuring the cooperation and effective joint action of the several internal organizational units vis-a-vis our domestic and foreign partners.
10. Strengthening collective leadership, creating the conditions for factory democracy and seeing that the forums of factory democracy function.
11. Further development of the internal interest and incentive system.

8984

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MILITARY

HUNGARY

# COMMUNIST INDOCTRINATION OF ARMY OFFICERS DESCRIBED

Budapest NEPHADSEREG in Hungarian 1 Mar 86 p 7

[Article by Gyula Toth: "Educating Them To Be Party Members and Communists"]

[Text] In the party life of the Mate Zalka Technical Military College, the tasks of party building have been at the center of attention for years. Educating the officers of the future to be Communists and party members is considered one of the most important tasks and goals of the college's branch party organization. This was the topic in our talk with Colonel Bruno Palosfalvi, secretary of the college's party committee.

[Question] How and to what extent do the Communists at the college take part in educating the students to become party members? What are the most important aspects of this work?

[Answer] Education for party membership is an important part of the entire political activity at our college, including party work. In our judgment, our local party organizations and our Communists have a good understanding of the ideological-political aspects of student admission, and they implement these ever more consciously in the course of educating the students to be party members. Consequently, the leaderships of the local organizations and the party groups are doing their educational, organizational and administrative work with appropriate political responsibility and expectations. They have come to understand that the soldiers need Communist officers who are qualified to defend our socialist fatherland and to educate young recruits, on the basis of their political commitment and resolution, their high-level professional training and their sense of vocation.

The time spent at the college is enough for the best students to reach the ranks of the party and to lead their unity as officers well-versed in party policies. The college's educational work, the programmed instruction in Marxist-Leninist ideology and its practical implementation through party policies, and the concrete and direct educational work of the instructors and commanders create the fundamental prerequisites for this goal.

Concepts of party work, developed by party leaders, serve to establish continuity and purposefulness. These are generally developed at the beginning of the training year, specifying the activities for each day, and are continuously refined. They are generally well implemented. To a certain

extent we were able to further confine the formal practice emerging in the course of admissions, and positive efforts have been made in improving the methods of preparation as well. We are making efforts in the improvement of individual preparation, in fostering comradely discussions, in strengthening personal relationships, in offering help to study and to expand the working relations between instructors and students. The successfulness of our activities is shown by the fact that 55 to 60 percent of our graduates leave the college as party members. We think that this proportion is realistic and well-founded. By the way, our party work is directed not only at our students but also at our civilian instructors, at professional soldiers, and at conscripts.

[Question] How is this educational work succeeding with the freshmen?

[Answer] We still have some problems in this area. In our experience, our work in recruiting party members is more difficult among both freshmen and sophomores than among more advanced students. The reason for this is that there is relatively little time for getting acquainted with the students. They have to work hard, they do not know each other very well, and the local KISZ organizations lack practical experience. However, after the initial problems and hesitation, our work has more proper direction and appropriate methods. Getting to know the students and consciously educating them is a high priority. The number of freshmen applying for party membership has been stabilized around 30 to 40 and we think this is a realistic figure. We think it is good practice that freshman party members are "recommended" by the party leadership to the party secretaries of the special departments. This is the time to consider those freshmen, who have not yet been admitted but whose application has been considered by the leadership. If the leadership finds them suitable for party membership, then it will recommend them to the special departments for inclusion in party work.

[Question] How is admission to membership prepared by the local organizations? Who are the ones who generally make recommendations?

[Answer] The consultants appointed by the leadership are doing their work with great care. Students trust them. Preparation generally takes place on an individual basis but sometimes it is also done in groups, especially when there are many applicants. In the meantime, the consultants find out about the students' attitude, their opinion about various political questions, their characteristics, their interest in community affairs, their interest in personal advancement, their private life and so forth. The consultation system has proven useful. It makes the young applicant aware of what is expected of him.

The persons making recommendations play an important part in the education of a party member. They are doing their work with great responsibility and know-how. They mainly include principal instructors in political education, home room instructors, and commanders of sub-units. We would like to expand this circle so that we could make use of other important resources. For numerous Communist instructors, higher-ranking commanders and Communist students who have been working with young men for years are excluded from

among those who make recommendations. This is not good practice. It does not encourage the broader party membership to take an active part in the education of future party members.

[Question] What role do the college's KISZ organizations play in raising the party's new generation?

[Answer] We think that it is a good and useful practice that, in the case of young people KISZ-age, the KISZ organization should also make a recommendation, with few exceptions. I think I can even say that the KISZ communities have a decisive role, being the party's basic educational schools. It is here that young people are assigned community tasks for the first time. This is the basis of evaluating their work, social activity, the development of their attitude and political outlook, and their willingness to make sacrifices. The KISZ's local organization is the first forum where the applicant is evaluated. These discussions take place in a critical atmosphere in which the applicant's qualifications are thoroughly examined. The college's KISZ organizations are also very serious about their responsibility as one of the parties who make recommendations on behalf of the applicant.

[Question] What happens after the admittance to party membership? How is the work and development of the young Communists supervised and helped? What kinds of party tasks are they given?

[Answer] With the admittance to party membership education of party members and Communists is not finished. The entire party membership is responsible for their integration as new members. In local organizations in which there is meaningful party life, the young party member will find his place rapidly. We think it is important to make him aware of the new tasks in the new community. For this reason, the party leadership assigns them concrete party tasks that are appropriate to their abilities. For example, they are included in the work of the party leadership as party group stewards, as members of the KISZ leadership and as organizers of various programs. They hold remembrances and political orientations, help the weaker students, organize cultural and sports events, take part in the maintenance of regional relations and in the supervision of defense education and career guidance. Of course, in the course of carrying out these tasks, they are continuously helped and their work is continuously evaluated by party groups.

It has become an established practice to oversee the work and development of the young Communist officers who graduated from the college. For the fruit of our work ripens at the unit level. To what extent they can apply in practice what they learned at the college is determined there. According to our experiences and surveys as well as according to the feedback we receive, the young Communist officers are doing exemplary work and are coping splendidly in every area.

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POLITICS

INTERNATIONAL AFFAIRS

TOP GDR SCHOLAR DISCUSSES PEACE INITIATIVE, SDI

East Berlin HORIZONT in German Vol 19 No 3, Mar 86 (signed to press 3 Mar 86)  
pp 8-9

[Article by Prof Dr Max Schmidt, director of the GDR Institute for International Politics and Economics, vice-president of the GDR Peace Council: "New Challenges to Human Thought and Action"]

[Text] There is no doubt that at the end of the 20th century mankind is confronted with an array of new strategic, political, economic, social and technological challenges. These result from the basic problems confronting all of mankind, all nations and peoples in the East, West, South and North, with regard to securing the social and natural conditions for the existence of human civilization.

Briefly described, these problems of survival are the following:

- the establishment of world peace and the prevention of a nuclear catastrophe by a halt in the arms race and the transition to substantial arms limitations and disarmament;

- the elimination of the growing economic, technological and social gap between industrial nations and developing countries, as well as the growing impoverishment of a large portion of the world's population in the majority of the countries of the "Third World;"

- solving the other global problems of mankind, such as preservation of the environment, the elimination of disease, and others.

Among these efforts, securing the peace has a priority position, since a nuclear war would most directly threaten the survival of the human race, but also because the solution of the other problems, which in the long run are no less important, depends to a great extent on the preservation of peace. Armament and weapons--whether nuclear, conventional or even space-based weapons--are not an appropriate means of meeting these new challenges. Rather, they play the role of a negative catalyst which today complicates and blocks the solution of problems that underlie these new challenges, and which tomorrow could under certain circumstances make a solution unattainable.

## Survival or Demise of Mankind?

In a third world war, the existence of nuclear weapons in the quantities that have been accumulated would not allow for any possibility of the survival of mankind as a highly organized social form, not even in a purely physical sense as a race. This is a fundamentally new situation without historical precedent. This establishes a completely different framework for human life and its preservation, for relationships and rivalries between nations as well as for the way in which these are expressed. To continue to act in accordance with the standards and behavior patterns of the pre-nuclear age could be literally suicidal. Herein lies the actual fundamental challenge to our epoch, a challenge to political action and to its precursor, human thought.

Albert Einstein's observation that the atomic bomb has changed everything except the way in which we think has by no means lost its warning justification in this regard, because the elementary logic of the nuclear age is far from becoming a parameter for the policy-making of all nations. According to this logic, international relations can no longer be concerned solely with the opposition of interests and states, nor solely with the confrontation between two social systems; now there is an issue that goes beyond the existing basic conflicts--the question of the survival or the demise of mankind. And while the apocalyptic side of this alternative could be transformed from possibility to reality by just one state, even by very few people, the positive side requires the effective cooperation of a broad majority of states and peoples, including all of the nuclear powers, above and beyond all political, social and other differences which separate the nations and peoples of Earth and in part cause enmity among them.

Mikhail Gorbachev, General Secretary of the Central Committee of the CPSU, emphasized in a press conference following the Geneva summit meeting that in keeping with this new way of thinking the time has now come "to master the great art of living with each other under the present conditions of the atomic death-threat." What better solution than to follow the suggestion of the USSR, and "to enter into the third millennium without nuclear weapons on the basis of mutually acceptable and rigorously controllable agreements"?

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From antiquity, states have based their foreign policy on the classical Roman maxim: *Si vis pacem para bellum*--If you want peace, be prepared for war! Today, when the presently existing nuclear potential would suffice to destroy mankind many times over, every further increase in weapons increases the probability of one's own annihilation in war. Peace can no longer be achieved by force of arms. More weapons do not mean more security. This is nowhere clearer than here in Europe, where the member nations of NATO and of the Warsaw Pact confront each other armed to such an extent that in the event of a conflict this would mean the complete loss of their security. In the final analysis, this necessarily leads to the conclusion that arms limitation and disarmament have become an objectively necessary prerequisite for establishing a lasting peace.



As Mikhail Gorbachev once again underscored at the 27th Party Congress of the CPSU, socialism unconditionally rejects war as a means of solving political and economic contradictions and ideological disputes between nations: "Our ideal is a world with without weapons and force, a world in which each people can freely decide on its own course of development and way of life. For this reason, the struggle against nuclear danger and the arms race and for the preservation and consolidation of world peace remains the primary direction of the international activity of the party. There is no alternative to this policy. Today's world is much too small and fragile for warfare and the politics of might. It cannot be saved and preserved if the pattern of thought and behavior which for centuries were based on the justification and legality of wars and armed conflict are not decisively rejected once and for all."

The understanding of the relationship between war and politics must be radically changed. This concerns above all Clausewitz' notion of war as an "instrument of politics." The use of nuclear weapons cannot be a means of rational politics; it would be an irresponsible and irrational endangering of the existence of the human race. We have arrived at a point that Clausewitz himself ingeniously anticipated when he spoke of the possibility that "the means could lose any relationship to the end." Because of this, a number of traditional military categories have also lost all meaning--such as the concept of victory, which had always been the primary objective of warring parties. As Mikhail Gorbachev and Ronald Reagan pointed out in their joint declaration of November 21, 1985 in Geneva, there "can be no victors" in a thermo-nuclear war.

There is no military-technological solution to the question of peace between East and West. The development of the nuclear arms race--from nuclear fission to nuclear fusion weapons, intercontinental rocket systems, MIRV technology to the present trend to first-strike nuclear weapons on the part of the Americans--has made this clear. Every qualitative leap in nuclear weapons technology has narrowed the range of political responses to crisis or even to war; the number of options has steadily decreased. Today, we have reached a threshold beyond which, in view of the warning times which are less than 10 minutes, political decisions could be replaced by "automatic" technological procedures and man would thereby no longer master his own fate, but would be dependent on his computers. And all of this without the slightest increase in the cause of securing peace--the probability of the destruction of human society by a nuclear war has never been greater than it is today--, as the result of a development in which military technology has often enough been preferred to political action and has even replaced political action!

The reality of the mutual position of vulnerability to nuclear attack of East and West when positively viewed also implies a mutual dependence in terms of security. Guaranteeing national security can only be realized jointly, i.e. internationally, no longer by the opposition, but only the active, cooperative partnership of the opposing partners. Erich Honecker, chairman of the council of state of the GDR and general secretary of the central committee of the SED, recapitulated that "East and West are allied with each other today in a partnership of security, whether they like it or not."



All this leads to a point which could be described as the gravitational center of the logic of the nuclear age. It leads to the recognition that world peace can no longer be regarded as a commodity which can be selected, as it were, from among other goods, but rather that the securing of world peace has become a condition sine qua non for a continued existence of human civilization. Peace is certainly not everything, but it is just as certain that without peace, nothing else matters! There is no longer any reasonable alternative to peaceful coexistence between states with differing social orders; for we shall either survive together or perish together.

#### Peaceful Coexistence--More than Non-War

In this connection, the notions of peace and peaceful coexistence must contain much more than absence of a state of war. They must equally include:

- an international process of the successive reduction of the material danger of war by means of arms limitation and disarmament;
- the recognition of realities and of the legitimate security interests of other states by all participants in international relations, and
- a development of cooperation between governments within and between differing systems on all levels and with the greatest possible breadth and depth, i.e. in political, military, and economic spheres as well as in the cultural and interpersonal levels.

Nuclear weapons and possible future space weapons as well as the political and military concepts and strategies linked to them must be judged according to the contributions they make to the solution of the problems related to the survival of mankind which were outlined at the beginning of this article; they must also be evaluated based on the way in which they correspond to the logic of the nuclear age.

The number-one survival problem--the necessity of preventing a nuclear holocaust--first came about through the nuclear arms race. The paradoxical aspect of nuclear weapons rests on the fact that the logic of the nuclear age is rooted in the existence of these weapons, but that the weapons themselves contradict this logic, since they are the material cause of the present danger of nuclear destruction.

In this regard, the following should also be pointed out. It is both a fundamental as well as an ominous mistake to assume the truth of the maxim that is widely accepted in the West, that 40 years of peace in Europe is a result solely of nuclear deterrents. If this corresponded to the facts, we would be condemned to endure a nuclear fatalism, to "eternally" accept the inevitability of the nuclear sword of Damocles. However, even the authors of this thesis must admit that it is not possible to point to a positive proof for this assumption.

The long period of peace in Europe is not the result of any blindly effective deterrents, nor is it an enforced passivity resulting from the threat of

punishment; rather, it is the result of conscious political action above all by the states of the socialist community, based on the establishment of a military equilibrium. It is the result of realistic action also by the other European states and by the other powers which are involved in European affairs. I would describe this as a result of European post-war developments, as the leitmotif of these developments, which was not always clearly recognizable, which even threatened to disappear during several crises, but which, in the final analysis, proved to be maintainable.

The underlying political behavior of the states in East and West naturally had and has to do with the knowledge of nuclear weapons and the consequences of their use, to be sure, but it also involves the experiences of two world wars, political responsibility, morality and ethics, and the positive traditions of European civilization and culture. It would be utterly irresponsible to underestimate this aspect, rather than to intentionally strengthen and utilize it.

As far as possible offensive space weapons are concerned, i.e. the US SDI program, the question of whether they can contribute to the survival of mankind and are in keeping with the logic of the nuclear age can be answered with great clarity: absolutely not.

#### SDI No Substitute for Offensive Weapons

This is not the place to examine in detail the arguments of the proponents of the SDI program, but as many experts in socialist countries and many specialists also in the West have ascertained, these arguments, to put it clearly, miss the heart of the matter. Space-based weapons are neither defense systems in the sense of an antipode, nor are they a substitute for present-day offensive strategic weapons; they do not lead to the elimination or even to the reduction of the present nuclear arsenal, nor do they bring about any kind of increase in stability with reference to the question of peace. Their consequences would rather be of a completely contrary nature, since an objective reciprocal relation exists between offensive and defensive strategic systems that could be removed neither by means of logic nor by means of politics and certainly not by means of politics or semantics.

The ABM treaty and the SALT II agreements between the USSR and the USA are based on this reciprocal relationship, and this reciprocal relationship is recognized even by analysts of the US military, e.g. of the Strategic Studies Institute/US Army War College, who formulated it as follows: "...all planners must regard a space-based missile defense system of the enemy as support for his offensive forces."

For military, scientific and other reasons, it is in principle impossible to achieve a perfect missile defense, an impenetrable shield. There is general agreement on this on the part of experts in East and West, including the guiding spirit of SDI, Edward Teller, and the director of the "Star Wars" program, General James Abrahamson. For this reason space-based weapons could only be effective as an integral, supplementary component of a unified offensive potential--not to ward off a nuclear attack, but rather to minimize or to paralyze a second strike that has been reduced by a nuclear first

strike, a "residual" response of the enemy.

In the final analysis, space-based weapons could only be of benefit to an aggressor! They could lead to the emergence of the dangerous illusion that a nuclear war could after all be "conductible" and "winnable" under certain conditions. All this would erode the strategic stability between East and West with its fundamental element--the approximate military and strategic equilibrium between the USSR and the USA--, would lead to a strategic chaos in comparison with the present situation, which in itself is certainly not uncomplicated nor easy to fully comprehend, a chaos the characteristics of which would result in uncertainty, instability, incalculability, and other negative effects. While the opponents in the present nuclear duel scenario confront each other with edged weapons, they would in that case with great probability permanently have their finger on the trigger. What this would mean needs no further explanation.

This is the strategic background needed for the evaluation of space-based weapons. This leads to the conclusion that such weapons not only make nuclear weapons "obsolete," but rather that they would advance the nuclear arms race to a level of previously unknown intensity. The first response of the side threatened by space-based weapons in their retaliation capacity would of course be to perfect and stockpile its own nuclear weapons, above all strategic offensive weapons, in order to guarantee that they can reach their targets in the future as well. In my view, the only possible conclusion is that space-based weapons would bring about a feverish arms race in all directions--in the cosmos as well as on Earth--and arms race which could well be irreversible under certain circumstance and which could easily dispense with the limits of political control of a military potential. The restrictions which exist today for an unlimited expansion of a nuclear arms race--the ABM treaty and the SALT II agreements--would be the first victims of such a development. The trend towards the objective replacement of political decision-making by technological processes could make a qualitative leap in the direction of irreversibility solely as the result of the unavoidable automation of strategic activities due to the introduction of space-based weapons!

The most far-reaching challenge that confronts us in the guise of this possible development perspective consists solely of not allowing this to happen. The primacy of policy-making over military and technology must be preserved. This requires to putting an end to the unfolding of military-technological autonomy, and this can happen only politically, just as the SDI program itself is not the "fateful" result of some kind of technological development but rather of conscious political decision-making. Preventing the comprehensive militarization of space has become a key security question in East-West relations, an indispensable precondition especially for the reduction of the nuclear weapons arsenals, as Mikhail Gorbachev also emphasized in January 1986. In response to this challenge, the USSR gave an answer--a concrete, comprehensive program with a precisely outlined time schedule for the complete elimination of nuclear weapons throughout the entire world. This political answer sheds light on the direction in which alone it will be possible to reduce the danger of nuclear war, i.e. real progress in security for all sides. Preventing an arms race in space and eliminating

nuclear weapon from earth are inseparably linked to each other--this is also shown with great clarity in the confirmation of the mandate for the Geneva negotiations of Mikhail Gorbachev and Ronald Reagan and at their summit meeting in November 1985. Meeting this challenge therefore means utilizing the present opportunity to radically reduce the number of nuclear weapons, certainly by closing the door to the armament of space.

The necessity to prevent the militarization of space is directly connected not only with the question of peace, i.e. with the number-one survival problem of mankind; it is related to the other survival problems discussed at the beginning as well. If, following the development, creation and introduction of space-based weapons, an unavoidable, complex and long-term arms race were stepped up, then mankind would also be digging its own grave, because the overcoming of the underdevelopment of the "Third World" and of ecological problems would be postponed indefinitely.

Neither the material nor the financial means nor the intellectual-creative potential would be available to the necessary extent, and it would be impossible that under the conditions of an increasing danger of nuclear war, which would further stimulate distrust between nations, the kind of international cooperation be developed in the breadth and depth necessary to deal with these problems.

The seriousness, the significance and the urgency of the issues which have been briefly sketched here are intensified by the fact that mankind urgently needs both space as well as a most diverse and rapid technological development for its continued economic, social and cultural progress and for the solutions of problems of survival. We need space and high technology in their civilian and peaceful aspects, in order to open up new sources from which we can satisfy in a more comprehensive way our material and intellectual needs.

In this direction, too, the Soviet Union has carried out pioneering work with its suggestion for a peaceful international exploration and exploitation of the cosmos and for the creation of a corresponding space organization. This speaks to the interests of all nations. And this is also true of the GDR, which--although it has considerable economic potential--belongs to the majority of those small and mid-sized countries which are not able to explore space by their own means alone. And especially from the point of view of the GDR, it can be said that we already enjoy the mutual benefits of many years of fruitful cooperation in space with the USSR on the basis of equal partnership.

It will only be possible to mobilize and to utilize in a comprehensive way the productive potential of the cosmos as well as of new key technologies if these are not placed under a military tutelage. The challenge, to use this concept one last time, consists in the final analysis of putting an end to the perverting of space exploration and of scientific-technological progress for destructive military purposes, thereby opening up for humanity lasting real chances for survival and sources for prosperity, the scope of which cannot even be fully grasped in today's world.

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POLITICS

BULGARIA

# SOFIA PARTY ORGANIZATION ACCOUNTABILITY REPORT

Sofia RABOTNICHESKO DELO in Bulgarian 13 Mar 86 pp 1, 4

[Report by Radoslav Radev, Elena Racheva and Lulivera Krusteva: "Always in a Fairway of the New!" Atanasov's speech at conference was published in the EE Daily Report 20 Mar 86]

[Text] A strong, united and active party organization is acting, creating and directing the energy of the working people toward constructive projects in our capital--the heart of socialist Bulgaria. With full justification, Comrade Todor Zhivkov characterized it as a militant, dedicated and powerful leading rank of our party.... The life and struggle of our entire party are focused and reflected in it as though passing through a lens!

The day 12 March was exciting and important to the party organization in the capital. It was holding its 25th accountability and election conference at which it was to draw lessons from the past and from its accomplishments and formulate objectives worthy of the challenges of the time and the scientific and technical revolution, and establish the decisive role of the human factor in the forthcoming fatal transformation.

On their feet, warmly, sincerely and with tempestuous and prolonged applause, delegates and guests welcomed the presence of Comrade Todor Zhivkov. His concern, constant attention and creative encouragement in the formulation of long-range ideas and the development and implementation of major programs for the progress of the capital, have always given an impulse to the party members and the working people to work with inspiration.

The other members of the presidium included Comrades Grisha Filipov, Dobri Dzhurov, Milko Balev, Ognyan Doynov, Pencho Kubadinski, Stanko Todorov, Chudomir Aleksandrov, Andrey Lukanov, Georgi Atanasov, Georgi Yordanov, Grigor Stoichkov, Dimitur Stoyanov, Petur Dyulgerov, Stoyan Markov, Stoyan Karadzhov, Dimitur Stanishev, Stoyan Mikhaylov, Vasil Tsanov, Kiril Zarev and Emil Khristov. Also attending were other party, state and economic managers, public figures, workers in the scientific front, labor heroes and veterans of revolutionary struggles.

Anastasiy Donchev, first secretary of the Sofia City BCP Committee, opened the conference, which was held at the L. Zhivkova People's Palace of Culture.

The materials, which had been distributed to the delegates in advance, the speech by Mincho Chuntov, Sofia City party committee secretary, the debates at the general meeting and the discussions in the individual sections, which followed, provided a businesslike and critical analysis of the period under accountability. It was natural and logical for the analysis of work done over the past two years to be supplemented by assessments and conclusions relative to the past 5-year period and related to the invaluable historical worth and dimensions of the April plenum.

Which of the accomplishments were main, most essential and most significant? Perhaps the fact that under the leadership of the party organization Sofia has been established as the largest territorial-production complex in the country. Today within a single year it generates as much output as the entire country during the year the April plenum was held. The production-economic potential has reached a high degree of maturity and today can resolve qualitatively new problems. The people as well have grown up. The leading role of the city party organization is increasing.

The main task and objective of the city party committee and party organization was for the economy of the capital to switch to an intensive track and to achieve breakthroughs in the strategic areas and in technological specialization, such as electronics, biotechnology and laser technology and instruments. The production of new series of mini- and macroelectronic computers, systems for digital programming control, and matrix processors for powerful information complex was successfully accomplished. Computerized technologies for the automation of engineering work, production management and, particularly, continuing and discrete processes, are being developed. The Optika Scientific Production Combine is already developing laser sources and technological equipment, the production of which will triple during the 9th 5-Year Plan.

The scientific and technical revolution demands a new type of thinking and mood, a new approach and work style. It faces cadres, collectives and working people with clashes and conflicts and risk situations. It is absolutely clear that in order to resolve the difficult and responsible problems today we need not only faith and enthusiasm but also knowledge, high skills and a new level of participation of everyone in management. Unfortunately, it had to be acknowledged that behind the seeming agreement and statements by some managers and specialists that they are retuning themselves to the waves of scientific and technical progress, there were no realistic practical accomplishments and results and work and actions followed the old methods. We have become sated with organizing endless headquarters and holding meetings where we listen to verbiage and make appeals, although the question is not what we intend to do and are persuading others, but to act, Todor Dotsev, first secretary of the Kolarov Rayon BCP Committee stressed in his statement. We must admit that the breakthrough in the scientific and technical revolution remains small. We have not clarified our approach. We have become accustomed to poor traditions and we show no concern. It makes the heart ache to visit a plant and to see how much expensive equipment is idling. In the rayon 25 percent of basic machine-building equipment is not used to capacity. Other delegates spoke in the same spirit.



The scientific revolution means order, strict discipline and responsibility everywhere and in everything. Yet how many irresponsible and failed decisions have been made by various authorities, departments and institutes. Some senior managers pursue not a state but a personal policy, doing everything possible to prevent production facilities from being transferred outside the capital. Rumen Neshev, first secretary of the Lenin Rayon BCP Committee, said that there is a fear to open a dialogue with superior authorities and that important problems remain unresolved years on end because of incompetence. The sluggish implementation of assumed obligations, the inclination to extend deadlines and shift responsibilities and endless bureaucratic departmental bickering affect not only the economy but also the working and living environment of the districts, for scientific and technical progress should seek and find its place also in resolving the city's ecological problems, which are numerous. The pollution of a number of districts triggers justifiable concern, as does the fact that no more than one-third of the city's enterprises meet health requirements and about 15 percent of all workers are working under conditions of permanent professional risk. A real change in this respect cannot take place without the urgent reconstruction of the plants in the capital, something which is "strangling" the city, and without resolving the problem of parking and motor vehicle "invasion."

Speakers at the general and section meetings and discussions stressed that the fatal turn toward the scientific and technical revolution and the implementation of the historical resolutions of the February 1985 and January 1986 BCP Central Committee Plenums require, first of all, a radical reorganization of the current production structure. The current share of machine building in overall industrial output is no more than 33 percent and, furthermore, it requires a technological retooling and the retooling of the other sectors. The situation in the chemical industry, which is another bearer of scientific and technical progress, is no better. This industry is developing essentially the production of rubber goods and reagents which pollute the environments. Other "bottlenecks" in scientific and technical policy were discussed as well. We cannot try to compare ourselves against ourselves without taking into consideration global achievements and prototypes and we cannot be satisfied with half-way successful accomplishments.

The delegates did not avoid the question of the existence of morally obsolete technological principles to which people remain slaves. However advanced the installed equipment may be, unless awareness, responsibility and approach are not changed, funds will be wasted and defective goods will be produced. Last year alone the overall amount of damages from accepted and awarded claims totaled 1,382,000 leva. Full-day idling and truancy in industry totaled 134,000 man/days, or failure to produce industrial commodities worth about 40 million leva. Blagorodna Pavlova, a robot-car system operator at the Sredets ZEM [Electrical Machinery Plant] spoke with concern about weaknesses in the contractual system and equipment management, and rushing in the implementation of the plans, which affects the quality of output and creates justifiable concern in the brigades.

Indeed, science and technology face the "hundred-head dragon," which absorbs initiatives, ideas, new developments and creative plans. There is extremely little time for coming out of the magic circle of tales and statements and

bureaucratic accommodations and achieve truly revolutionary changes so that the capital city may set the example for the rest of the country. The scientific and technical revolution must become the meaning, destiny and responsibility of every party member, each primary party organization and all labor collectives in the capital.

Some of the city's grave social problems were considered openly and sharply in the conference documents and delegate statements.

It was pointed out that despite the efforts and the seemingly satisfactory pace of construction, problems of housing shortages and the urbanization and cleanliness of the city and the deeply rooted shortcomings in transportation, trade and services remain. Unfortunately, the responsible cadres in these areas continue to stress objective difficulties and take palliative and partial steps, remaining deaf to the complaints and critical remarks of the people in the capital.

Where did the conference look for a solution to this difficult situation? Above all in the acceleration of housing construction. The pace of development of the Sofstroy DSO, which is the largest construction organization in the capital, is unsatisfactory. Basic facilities are being reorganized at a sluggish pace and for many years the number of completed housing units has remained unchanged. No single area in the city is being built on a comprehensive basis. Even in the most recently completed districts, such as Druzhba-2, Obelya-2 and others, housing blocks are completed and delivered without basic service facilities, or heat, telephone and pedestrian and recreation landscaped areas. The delegates exposed the truth that disproportions in the development of the capital, which have taken years to accumulate, are triggering negative manifestations and are reflected in the political moods of the citizens. In itself, more construction alone is not enough. Priority must be given to problems of construction quality and the proper allocation and maintenance of apartments.

Confidence was expressed by the party members at the conference that the formulated programs for the solution of such vitally importance social problems will be implemented. The task is to accomplish an upsurge in the comprehensive development of residential areas and in trade and consumer services, particularly in transportation and communications.

As the delegates clearly realized, it is no secret that real and profound change cannot take place unless the work style and methods of the city party organization are improved. The organization is the political headquarters, the engine which will give priority to scientific and technical progress on all levels and in all areas and units. Today a number of party committees and party organizations are essentially "in favor." However, they tend to let someone else apply novelties; their philosophy is that this is the concern of their superiors. That is why no action is taken beyond the formulation of a large number of good programs. This is followed by failures and reports.... Dynamism and reaction speed are necessary in order not to fall hopelessly behind. It was admitted at the conference that as a result of subjective weaknesses the tremendous opportunities for the development of live creativity and initiative by the working people are not adequately used.



Another most serious problem is that of improving work at home and the struggle against negative phenomena and for shaping a proper public opinion, as well as of ties and continuity between different generations. In a self-critical spirit, Georgi Burdarov, deputy director of the Center for Party Construction at the AONSU, noted the existence of "blank spots" in the science of party construction. He discussed the work of the primary organizations under the conditions of scientific and technical progress and of exercising systematic party control over administrative activities.

An important problem which was discussed with a feeling of responsibility was the work of leading cadres. The city committee has adopted an exigent attitude toward the actions and behavior of managers regardless of their position and merits. Thirty-two managers were expelled from the party, 138 were given party punishment and motions to relieve 82 from their position for violations of laws and communist morality standards have been filed. Nevertheless, failures in the selection of some party cadres, who lack the political maturity, knowledge and skill to manage under the new circumstances were also acknowledged. Democracy in cadre work must be developed and the competitive-elective principle promoted, opening the way to people who represent progressive trends and dimensions of scientific and technical progress and who can accept and apply new developments in practical work.

It must be said clearly and firmly, for the sake of truth, that the city party committee and the Sofia City People's Council bear major responsibility for adverse developments which have taken years to accumulate in various areas of life in the capital and for the development of a number of negative processes and phenomena and failures in the work. They were unable to surmount their bureaucratic moods, penetrate deep within the existing major problems and display sufficient firmness and daring and undertake the full solution of the problems. No atmosphere of dynamic and creative work and of intolerance of inertia and partial and ostentatious measures was established.

Georgi Atanasov, Politburo candidate member and BCP Central Committee secretary, spoke at the conference (speech published elsewhere). The Sofia city party conference has ended. It reported major accomplishments but also indicated the existence of tremendous and as yet untouched reserves. The entire party expects of the Sofia party organization new and even more outstanding accomplishments, a greater creative manifestation and the assumption of a strong leading position and role in the economic, social and spiritual advancement of the country. The comprehensive increase of exigency, the development of initiative, practicality and concreteness, uninterrupted supervision and intolerance of anything that is conservative and support of what is new, daring and progressive and full unity of words with actions are no more than a few of the conditions needed for taking successful steps into the future and for worthily welcoming the 13th Congress.

order to be successful," she pointed out, "I must always be in the fairway of the new."

To be in the fairway of the new: no more accurate and clear description of the appearance of the party member today and the example which the party

member must set under the conditions of the scientific and technical revolution exist.

To be always in the fairway of the new is the first, the main obligation of the Sofia city party organization.

A new city party committee, a control-auditing commission and delegates to the 13th BCP Congress were elected at the conference. The announcement that Comrade Todor Zhivkov was unanimously elected delegate to the congress was welcomed with sustained applause.

At its first session, the plenum reelected Anastasiy Donchev, first secretary of the Sofia city party committee. The following secretaries were reelected: Mincho Chuntov, Vasil Tsurvenkov, Delcho Lulchev, Lazar Lazarov, Stanka Shopova and Lilyana Vasileva. Aleksandur Bogdanov was reelected chairman of the city control-audition commission.

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POLITICS

CZECHOSLOVAKIA

TASS CITES CPCZ CENTRAL COMMITTEE REPORT

LD261113 Moscow TASS in English 1638 GMT 24 Mar 86

[Text] Prague, 24 Mar (TASS)--Socialist Czechoslovakia, implementing the long-term general line of the Communist Party of Czechoslovakia (KSC), has reached great heights in all spheres of social, economic and cultural life, stated Gustav Husak, general secretary of the KSC Central Committee. He delivered the KSC Central Committee's political report to the party's 17th Congress.

"Over the past 15 years," the speaker said, "national income has grown by 81 percent, industrial output by 97 percent, and agricultural production by one-third. Czechoslovakia's economic, scientific and technical cooperation with CMEA member-states, with the Soviet Union, in the first place, has substantially deepened. One of the main sources of our successful work is that we have relied and continue to rely on the support of the socialist community, on the firm friendship, alliance and unselfish cooperation with the Soviet Union and its Leninist Communist Party," Gustav Husak emphasized.

"The key matter of our time to us is to accelerate the socio-economic development of society, and substantially to raise the effectiveness of the national economy," the speaker went on to say. "We see the principal meaning of our efforts first of all in further raising the living standard of the people, in strengthening social guarantees for that, and in creating conditions for the harmonious development of the individual and for the deepening of the socialist way of life."

"In the coming 15 years," the report says, "the national income of Czechoslovakia is to grow by more than two-thirds with a considerable cut in materials- and power-intensiveness of production. The social productivity of labor is to go up by almost two-thirds. All-round intensification of the economy is paced by a considerable acceleration of scientific and technological progress." In this connection Gustav Husak emphasized the extreme importance of Czechoslovakia's participation in implementing the comprehensive programme for scientific and technological progress of CMEA member-states for the period ending in the year 2000, referring to it as a qualitatively new step in socialist economic integration.

Already in the current five-year period (1986-1990) Czechoslovakia is to make a decisive step in the implementation of the strategic line of economic and

social development. The principal goal is to achieve a 18-19 percent increment in national income resultant mainly of a rise in social productivity of labour.

Speaking of the party's social policy, Gustav Husak pointed out that in the Eighth 5-Year Plan period the citizens' incomes would grow by 14 percent and the average pay by 6.5 percent. Large appropriations are being channelled into the development of health services, education, culture, and housing construction.

"The preparation and the course of the 27th Congress of the Communist Party of the Soviet Union (CPSU) have made a fruitful effect on the entire pre-congress period of the KSC," Gustav Husak emphasized. "It has become an outstanding historic event and will undoubtedly figure prominently in the people's struggle for peace and social progress. That was the congress of great and bold goals, the congress of creation and peace, of high moral [word indistinct] and humanism, exactingness, Leninist firmness of principle, criticism, and self-criticism. That was the congress of creative Leninism and historical optimism. We fully support the results of the 27th Congress of the CPSU and its spirit of adherence to principle."

"The main goal of Czechoslovak foreign policy," Gustav Husak went on to say, "is to create favourable conditions for the building of a developed socialist society. The international prestige and influence of Czechoslovakia are determined by all-round successful development of our society and by the strong positions of our state in the socialist community. The growth of the economic and spiritual potential increases our country's contribution to the struggle for peace, and to the solution of the main problems of our times: to eliminate the threat of nuclear war and to achieve international security and disarmament."

"The consistent peaceful policy of socialist countries," the report says, "is aimed at stabilizing international relations, at continuing the policy of detente, at ending the arms race and at achieving disarmament." "The peace programme adopted at the 27th Congress of the CPSU," the report points out, "opens up a unique opportunity before mankind. This is a concrete and effective programme the goal of which is to rid the world of nuclear, chemical, and other types of weapons of mass destruction, to establish lasting peaceful cooperation between peoples and states with different social systems and to lay the foundation for a comprehensive system of international security. The KSC and all Czechoslovak people fully support the programme. We use all means and resources at our disposal in order to most effectively promote the realization of this great peaceful prospect."

"We shall continue to build relations with capitalist countries on the basis of equality, mutually beneficial cooperation and non-interference in internal affairs," the report says.

"Czechoslovakia is for a frank, honest and fruitful dialogue which would contribute to establishing mutual trust and to strengthening international security and the process of detente in the spirit of the final act of the

European conference in Helsinki. Any manifestations of pressure, discrimination, sanctions and embargoes are incompatible with that. Czechoslovakia also condemns the revanchist demands for a revision of borders and of the post-war set-up in Europe. Stronger security in our continent would undoubtedly promote the realization of Czechoslovakia's and the GDR's joint initiative aimed at creating in central Europe a zone free from chemical weapons."

"The international communist and working-class movements are an important political force in the struggle for peace, against the policy of imperialism, for social re-making of the world. Our duty is to support every initiative aimed at strengthening cooperation in the struggle for common goals, for peace and socialism with respect for the difference of tasks and activities of individual parties.

"In our foreign-policy activities we shall always take into consideration the interests of the Czechoslovak people and of the socialist community, of social progress and peace throughout the world. This course arises from the very essence of the socialist system. Socialism, social progress and peace are indivisible," Gustav Husak emphasized.

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POLITICS

GERMAN DEMOCRATIC REPUBLIC

CHURCH OFFICIAL INTERVIEWED ON RELATIONS WITH STATE

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[Interview with Manfred Stolpe, president of the East Berlin consistory of the Evangelical Church, by Prof Dr Guenter Wirth, editor of STANDPUNKT; date and place not given: "Church '1985' and 2000--Gathering, Opening, Mission"]

[Text] [Question] In my questions addressed to you--in your capacity in the league [League of Protestant Churches] as well as in a big Land church--I would like to start with a question which may be obvious in 1985, namely, how you view the predictions made by Guenter Jacob in his essay about "The Future of the Church in the World of the Year 1985" published in the ZDZ of December 1967. Let me first put this question to you in general terms and then be more specific. Of course, one has to keep in mind for a start how courageous Guenter Jacob was at the time to make any predictions and thus to invite demands which would be made of him--knowing that many readers of his "1985" essay, which was debated fiercely at the time, would be in a position to draw a balance sheet.

What does this balance sheet look like? The first question that might occur about this is the question as to what possibilities in fact exist of planning church processes for a long period, for this question touches not only religious-theological sets of problems but general historical ones--ranging to the assumption of historical laws...

[Answer] It would be irresponsible for the church leadership to forgo planning and prognoses. To be sure, every day has its own worries, and, thank God, we can in the last analysis trust in the leadership of our Lord. He will lead His church on ways it does not know and guide it whenever worries crop up. But God put His church into the world in order that may keep ready His eternal truth for all people. The church lives among people, it is an organization of people, and it bears responsibility for people. Today already, the church leadership must make decisions and initiate measures whose effect will reach into the next millennium--for instance, in appointing for life staff barely 30 years old. Including the care for relatives, the churches today are assuming responsibility for people to the middle of the 21st century. For the church is obliged to pass on Jesus' glad tidings with its staff, buildings, and branches of work today, tomorrow, and in the future.

Not until God himself relieves us of all service, not until He takes His cause into His own hands and leads our hope to the eternal aim, does our mission come to an end. This includes our mission for planning church processes. The church needs a prognosis which assesses the present as a prelude to the future, which perceives the church on its way and therefore is already pondering the possibilities of its mission of tomorrow. Faith does not give the church an alibi for an ostrich policy but demands that it do everything in its power to plan the prerequisites and conditions of its service.

This is much easier said than done. Particularly also in the case of a church which did not begin to comprehend until 50 years ago, the time of the Barmen Theological Declaration, that it must itself bear direct responsibility to its Lord for its testimony, service, and order. No king, and no state secretary of state for church affairs either, must relieve the synods and church leaderships of their worries about the future of their work. The churches must do so themselves, and they must continue to learn to do so. For since the time when our Protestant churches understood that they had to walk without crutches of others, they have also been kept busy with a series of difficult demands. They have constantly faced everyday problems, they have predominantly reacted, and often also stared helplessly at the radical ecclesiastical process of change which, accompanied by salient social changes, exceeds in its dimensions the effect of the Reformation and has yielded an utterly new experience for the Christian church here. What was more humanly plausible than to hold still, to shut one's eyes, and to think backwards?

Guenter Jacob was one of the first, perhaps the first altogether, to comprehend this total upheaval in its worldwide economic, technological, political, and ideological contexts. Guenter Jacob recognized the radical upheaval into which the church was thrown and in which it faces new opportunities. His paper on the future of the church in the world of the year of 1985 ties in with previous deliberations. As early as 1936, in a lecture "Church or Sects," he digested the findings of Barmen, and in 1956 he recognized the end of the "age of Constantine." For me, Guenter Jacob is something like an Old Testament prophet. Driven by a profound sureness of faith, he recognizes the signs of the times and also the lethargy of the church. His analyses are like fanfares. They want to shake one awake, want to show the community what changes it is surrounded by, what new tasks it confronts. Guenter Jacob wants to summon Christians to their cause here and now. In doing so, he wants to objectivize things by way of tough clarification and make people think further. Jacob's prophecy points out horizons; the details are secondary. The value of Guenter Jacob's paper "The Future of the Church in the World of the Year of 1985" does not lie in finding fault with details but consists in pointing out a direction. And the direction is right. That is even clearer today than it was 18 years ago.

Being well read, Jacob was familiar with the futurology of the sixties and Orwell's "1984." He tied in with it and went beyond it. His prognosis must not be measured by this coincidental date.

Finally, one must not overlook the considerable ecumenical role played by Guenter Jacob. He sees the churches as sharing the responsibility for the



pressing problems of mankind, i.e., the need for guarding against nuclear annihilation and ensuring world nutrition. As early as 20 years ago, Jacob foresaw that beyond all religions, ideologies, and social systems mankind finds itself in a boat in which it needs cooperation for joint salvation, not additional threats.

[Question] Further questions now ought to relate to sets of problems in the field of politics, church policy, theology, church law, and practical matters.

Let us first take the political questions. Probably one of the most important elements in Jacob's essay was the way he set his standards:

"In the GDR," he said, "we are incorporated in the socialist sphere as a highly qualified industrialized state. We should regard as out of bounds any speculation about any spectacular events as if our situation could change fundamentally as a result of dramatic political events."

Can one say that Guenter Jacob thus set the basic orientation toward the church in socialism as a task--as a long-term task? If so, where would you draw the distinction between him and Moritz Mitzenheim, who of course had followed this line earlier? Would you say that this basic task was assumed by the churches of our country in a continuous and consistent manner, particularly after the foundation of the league, and was solved with ever new steps of rapprochement?

[Answer] In the late fifties, Guenter Jacob sees in a crystal-clear way that the church in the socialist society of the German Democratic Republic cannot hibernate waiting for the return of past conditions. It has to assume its mission under the new conditions, with a view to the people in that society. Guenter Jacob seeks an open and critical relationship, unequivocal and ready for dialogue, with the state power of the GDR. It is not marked by anti-communism, widespread in the church at that time; wherever he can do so, he unself-consciously says yes, and wherever he knows he is bound by his faith, he unequivocally says no. When solutions were being sought through dialogue, Guenter Jacob was a reliable partner of the representatives of the state in his activity as a church leader in the politically difficult sixties. When the dialogue took place only as a unilateral communication of immutable determinations, he was inconvenient. His philosophical debate with Walter Ulbricht in 1965 was refreshing, his several tough but sincere talks with Hans Seigewasser in those years were progressive.

Guenter Jacob agreed with Moritz Mitzenheim as regards the fundamental concept that this church must orient the gospel at the specific location, the GDR, toward the specific people of this country and that, therefore, this church must consciously face the GDR society as the field of work assigned to it by God and affirmed by it. In this position both were pacemakers in the Conference of Protestant Church Leaderships, in which, before Guenter Jacob's participation from 1963 on, Moritz Mitzenheim occasionally faced the danger of isolation. In practical work, differences were frequently caused by the church and church policy conditions in Thuringia and in Berlin-Brandenburg, but also by Mitzenheim's and Jacob's different theological



orientations, and last but not least by their different temperaments. In his work as a church leader, Moritz Mitzenheim was intent on what was possible and achievable and made an effort to achieve aims he considered necessary with great persistence and caution. Guenter Jacob also remained a prophet in his service as church leader. Fond of open argumentative debate, he considered insistence on definite clarity also in matters of detail to be more important than tangible successes. Though definitely encouraging his staff to engage in tactics and diplomacy, he himself did not practice them as far as I know.

On the basis of their understanding of the mission of the Protestant Church in a socialist society, Jacob and Mitzenheim concluded that the state had to be expected to provide the necessary scope for preaching the gospel, spiritual care, religious instruction, and charitable work. Their position finally was reflected in the declaration of the bishops conference of 15 February 1968 in Lehnin. At that time an official church document of all Protestant Land churches in the GDR described the attitude and expectations of Protestant churches concerning socialism in the GDR, as follows:

--As citizens of the German Democratic Republic and as Christians, we proceed from the fact that after a war started by Germans there are now two German states.

--As citizens of a socialist state, we confront the task of implementing socialism as a form of more just coexistence.

--We ask that Christians and fellow citizens not sharing the weltanschauung of the leading party be allowed to share in the responsibility for our body politic without violating their conscience.

--We ask that the Christian citizens in the socialist state, in whose construction they are participating, be unequivocally granted recognition of their ecclesiastical life. In doing so, we ask that it be taken into account that the Christian faith is expressed in the working life and in the community of the individual parish and the church.

The League of Churches founded in 1969 and primarily bearing the mark of Albrecht Schoenherr, who combines the farsightedness of Guenter Jacob and the persistence of Moritz Mitzenheim, confirmed this position at the synod conference in Eisenach in 1971 by stating: "We want to be a church not beside nor against but in socialism." The synod conference in Schwerin in 1973 defined a church in socialism as a church which helps the Christian citizen and the individual community to find a way in the socialist society in freedom and the obligation of faith and to make an effort to seek the optimum for the whole. This attitude was continued by the League of Protestant Churches in the GDR in a concrete, consistent, and constant manner. The synod conferences are the annual signals making this development apparent in the clearest fashion. Thus the national synod in Dresden in 1985 pointed out: Our churches have embarked on taking our society seriously as a society which considers itself socialist and to accept it as the area assigned by God for putting the Christian testimony to the test and as an opportunity awarded by God for the service of the gospel.

[Question] If so, one probably would have to ask in addition whether this formula has already been grasped in full and has become living reality--beyond 1985.

[Answer] The Protestant churches in the GDR, the great majority of its officers, staff, and community members today are practicing the position of a church in socialism. A "church in socialism" is the briefest description of what the Protestant Church considers to be its mission in this country. But formulas are also dangerous. They must not become empty liturgy. A church in socialism means the constant task, the process, of Christ's community vis-a-vis this society and this state, the GDR. This process affects everyone and has several aspects:

--The church must remain a church, and therefore its final tie and freedom lie in God. Because of the clear ideological fronts, this occasionally is easier in socialism than in Western society. There cannot be a socialist church.

--Christians may believe that the promise of God is also valid for a socialist society. It is not a blank spot of God's map. It is precisely here that its testimony and service are needed.

--The church and Christians seem themselves challenged concretely to share in the responsibility for problems of the world and their own society. The efforts for peace and justice constitute for Christians practiced obedience to their faith. Seek the best of the city--that is also true as far as Christians in this country are concerned.

--Churches and Christians expect of the socialist society unhindered religious practice as well as equal rights and equal respect regardless of one's weltanschauung.

The state and society understood this position. It was taken into account in the agreement of 6 March 1978 between the Council of State and the League of Churches, which was confirmed anew on 11 February 1985 by the chairman of the Council of State and the chairman of the Conference of Protestant Church Leaderships.

A church in socialism is a two-sided process which must be practiced at all levels and in all spheres. It requires an empathetic and open dialogue as well as a constructive and patient attitude on both sides. A church in socialism does not mean pursuing short-term tactics; it means that the church, society, and state take a joint road over the long term from which there is no straying--realizing that life is going to present ever new problems where the joint road will have to prove its worth.

[Question] In this connection, there arises the question concerning the predictions by Guenter Jacob about the possible situation in 1985 compared with the actual situation--in other words, regarding the community situation, prerequisites, catechistic instruction, participation and education of "lay people," the position of the parson, and so on. Your answer to this question probably would be of the greatest interest...

[Answer] Guenter Jacob's predictions are radical and are frightening for many people. The crucial point is the realization of a situation of upheaval unprecedented in history. He sees the end of the early era of the church comprising about 2,000 years and predicts the collapse of the previous external form of the church. Only an insight into the pending changes and a root-and-branch reformation can enable the church to fulfill its mission in a time of worldwide secularization. To the person having grown up without religion, increasingly in the majority among the population, the church itself bars the view toward the truth being kept ready by it. A loss in membership as a result of a creeping decrease and the consequent ruin of the financial base rule out the maintenance of the church as it has existed in the past. It will no longer be possible to maintain a parochial system covering the entire area, and parsons will have to exercise their profession on the side and will have to be complemented by lay personnel sui juris, because the people's church is coming to an end. The corpus christianum is being replaced by a church in a world diaspora: "It is therefore possible to predetermine the personnel and material collapse of the past parochial system taken over from the medieval world of the corpus christianum under the fiction of the identity of the civic community and the Christian community. The inevitable shrinking processes will not occur under the auspices of anti-Christian decisions and a conscious rejection of the Christian gospel but will take place under the auspices of natural exsanguination without any dramatic conflicts and, as it were, silently."

We would be deceiving ourselves if we got over this by opposing the 1985 ecclesiastical reality to Jacob's prediction. True, some things are better than they were in 1967 and not by any means as negative as Jacob's "1985" predictions:

Attendance of Christmas Eve services has increased.

The frequency of celebration of communion has risen.

Church tax income has increased, and the income from collections has doubled.

Services without sermons, with succinct readings and strong musical elements, are very popular.

Two to four candidates apply for every church training vacancy.

The attendance at days of preparation of juveniles and adults has doubled.

Charitable work of church institutions and installations is more productive than ever and has become an irreplaceable element of the public health and welfare of all of society.

The demand for Bibles is increasing.

The church situation thus obviously is even better, externally, than it was in 1967. But that would be an illusion, for Guenter Jacob's key statements are valid:

The loss in quantity continues. The natural decrease in membership deriving from the difference between funerals and baptisms continues without letup. The doubtlessly existing interest in a number of things offered by the church generally does not lead to membership. Official church actions are less in demand. In sparsely populated areas the numerical decrease is considerable. Communities take their services from the churches into living rooms. Precisely in such areas the vacancy straits [Vakanznot] are great. Through repair and stalling retreat, church leaderships try to maintain the past parochial system, thus promoting resignation. Jacob is really right: a root-and-branch reformation is due. Organization of the church and its method of spreading the gospel must be adapted to the salient changes in order to make it possible for the message of Jesus Christ to be offered effectively.

God's kindness has spared the church the quick collapse prophesied by Guenter Jacob. Several factors have lessened the trend pointed up by him or worked against it; the predicted secularization will not bring with it a time lacking in emotion. The demand for offers addressing not only the mind but the emotions is rising. In addition, particularly people who are very well educated also search ever more intensely for the meaning of life, for truth, and in doing so come across the offer of the church. I presume that there are no times without religion ahead of us. The separation of the church does not mean the end of religion. In a communist society too there will be many people who cannot find the center of their lives either in a scientific view of the world or in personal consumption. It will remain a task concerning all of society to make possible offers for practicing religion and to promote them as stabilizing factors.

The loss in quantity has the side effect of concentration. The church of Jesus Christ is not being abandoned by committed people. If one has come to know God's glad tidings, one can at most turn one's back to it temporarily. Only fellow travelers have left the church. The faithful, on the other hand, have become more strongly committed. Religious life has become more intensive (communion), and the material sacrifice of the individual Christian is increasing. What with the loss of the great numbers, the religious and material efforts of the community increase. At the same time the variety of the church offer has increased, with the result that many people who are not members of the church participate in church events. New topics, new people, and a new interest show how the biblical message itself makes room for itself. Guenter Jacob predicted that. Today we see that, though new impulses as a rule do not emerge from traditional church work, it is nevertheless the point of crystallization of many seekers of God and truth. Finally it cannot be overlooked either that the church, which has become smaller, enjoys an amazing environment of support. For whatever reasons, the church is receiving trust and aid from all strata of the people.

Guenter Jacob was right in that the people's church collapsed by 1985, but mercifully its fall was a soft one, and it is experiencing itself again as a church among the people today. May it be blessed with gaining a new spirituality from this upheaval!

[Question] It stands to reason, of course, that precisely at this point one poses the question concerning a new structuring of ecclesiastical life--in other words, concerning the Eisenach recommendations and their consequences. In saying so, I am not out to side with those who adopt a Thersites-like attitude toward the failure of the recommendations. Rather, I am interested in not separating the problems of organization, of church law--in other words, of what is pragmatic--from the theological problems. Could it be that it just is not possible to initiate the emergence of such a church through an act of law and after the first failure to adopt what might be called a "sit through" attitude until a result is attained (see VELK [United Evangelical-Lutheran Church] in the GDR) but that--in whatever manner--this can be accomplished only theologically, religiously, spiritually?

[Answer] From Jacob's point of view, the Eisenach recommendations could only be the tip of an iceberg. They were out to gradually reduce the irresponsible structural expense of the entire church. As is known, this came to naught in the March of Brandenburg. Perforce the way to greater togetherness will continue, however. Nor does it require any longer any complicated texts of resolutions which frighten off even well meaning people. The growing together has already been taking place since 1969 through cooperation in the league. There is no rush to draw structural conclusions from that. Guenter Jacob incidentally warned against efforts concerning structural reform as an unnecessary diversion from urgently necessary theological work.

It is almost more pressing to examine the overall structure of the Protestant Church, from the parish to the church as a whole, to see if it is suited as an instrument for spreading the gospel. As yet the organization of a church comprising the entire population is being maintained at all levels. It will not be possible to change it through a comprehensive structural reform either, but has to be adapted gradually to the requirements of the service. This, however, presupposes a theological, religious, spiritual change toward a new church. It began with the assumption of the task at this place. It is to be continued by recognizing and perceiving the opportunities of a small group, from which priority decisions must derive. Leadership decisions will then have to keep the road clear for new overtures and to push back indispensable activities. Church law can be an important aid here if it makes possible sufficient flexibility to permit, for instance, without qualification new personnel-oriented community reforms in addition to the parochial community, and church representatives who work as such on the side, in addition to full-time staff.

[Question] Allow me to address a question which has been virtually taboo and which again is a question deriving from Guenter Jacob's article. When Jacob in No 12/1968 of the ZDZ reviewed the debate about his essay, he wrote among other things: "In the EVANGELISCHES PFARRERBLATT I gratefully noted the agreeably objective contributions, proceeding further in many individual questions insufficiently clarified by me, by Karl Kleinschmidt (who, however, now wanted to pin me down to the theology of convergence!), Herbert Trebs, Gert Wendelborn, Erich Evers, Walter Feurich, Manfred Haustein, and Goetz Bickelhaupt (whose contributions shows particular understanding!)." In other words, it was the "leftists" who had discovered the progressive trend in

Jacob's essay and were trying to enter with him and via him into a dialogue leading further with their church. In the end it did not come about, and, as before, the "leftists" (who, of course, are not at all united internally) see themselves as "outsiders" whenever they are in a mood of resignation, or as "pioneers" whenever they are optimists, but at a minimum as people who 30 or 20 years ago tried to do as individuals what the church is now trying to do as a whole. Now these "leftists" do not want any copyright, but they would like to be identified as what they were and generally still are, i.e., pioneers--with all their faults, of course.

How can the church develop further in socialism, religiously-theologically and in society, if one leaves these "leftists" out in the cold--out in the cold, marginalized, ignored, with only an excommunication a la Dibelius presumably not occurring any more?

[Answer] To be sure, the church failed vis-a-vis the community members who first only as individuals in their secular jobs, as theological teachers, or also as church staff and parsons pleaded in favor of accepting the GDR situation. They were often isolated, ignored, and even under suspicion. Also when the church as a whole began to recognize and accept the GDR as the place assigned to it, the fact was overlooked that as long as almost 20 years before similar positions had existed among the so-called "leftists." This failure to note is a consequence, albeit unintentional, of previous anti-communism. Unself-conscious people such as Guenter Jacob, however, did not judge by a procommunist attitude but by relevance to the community. The community-allied pioneers of the Gossner mission, for example, could be certain of Guenter Jacob's advocacy and promotion in the church despite the fact that they were pronounced "leftists." Today one can cite many examples of members of the community who for instance are known as a result of working in the CDU or in the National Front doing some very helpful work in community church councils, kreis church councils, synods, church leaderships, and posts. To be sure, the church still has to make up for a lot of things to its misjudged pioneers. But perhaps a number of people from among these persons who at one time were hindered and excluded by the church have also got into an outsider's mentality for which there is no reason any longer. The taboo should indeed be abolished by both sides.

[Question] This brings me, on a different plain, back to the starting point. What kind of standards and criteria would you apply if you were asked today (and I am asking you) what the church will look like around the year 2000, or what planning processes would have to be formed to enable the church around the year 2000 to perform its service and give its testimony? Would it suffice simply to continue with Jacob's standard and criteria, or would it not be necessary after all to adduce some qualitatively new factors for an analysis?

[Answer] Guenter Jacob's key statement is that the biblical message makes room for itself and will also get hold of people in the future.

That has been our most important experience and our strongest encouragement in the past few years. In a secularized world, too, with a constantly



increasing proportion of highly educated scientifically thinking people, many who seriously ponder about a responsible life and the need for a conscious coexistence of mankind hit on the offer of Christianity. Whatever may yet be achieved economically, scientifically, technologically, or culturally, mankind will not be able to get beyond the sublimeness and ethical culture of Christianity as illumined in the gospels. At present, when human existence is under the extreme threat of superarmament and social injustice, this is more evident than ever. Jesus' teaching offers man a chance of a responsible life and shows mankind a way to trusting togetherness. The Bible is the book of life of people of today and tomorrow. This basic fact is having its effect into the third millennium with or without us.

It is the task of the church to orient its structure, its order, its way of work toward the basic fact that all people today, every day, and until the end of the world will need Christ's glad tidings. That is the unequivocal mission. It does not mean in any way, though, that the institution of the church, this shabby baggage cart of God's eternal truth with its inadequate drivers and brakemen, has any claim to stable membership figures, let alone to the restoration of people's-church conditions. No, one has to assume first of all that, notwithstanding all the loyalty of its communities and despite a large number of wonderful parsons and staff, the institution of the church stands in the way of its cause. What I mean by this is not external inadequacies or human failings but the insufficient external effect. The center of the church, the church service, is not a transmission into the world but a separation from the world. It is an immensely important remembering and making sure on the part of church members, those who know the gospel and who on the basis of language and form employed in the church service can remember things they know. In the year 2000, however, 90 percent of the population will not be able to remember because they will have no connection with this language and form. The community of Jesus Christ, as the means of transport of the glad tidings, will have to learn by the year 2000 how to transfer its concern into the world of imagination of modern man who is not familiar with the naked man on the cross and at best considers Father Christmas to be a caricature of the dear Lord. A really public church service which is to have an effect beyond those who have already been instructed has to become comprehensible to those unfamiliar with the church whose number, for biological reasons alone, is growing constantly. At stake here, too, are promotion-effective modern external features designed to attract. That is legitimate, because bells alone do not suffice. But what is at stake above all is the imparting of the gospel. Already it is possible to identify factors which the church needs to fulfill its mission for all, all, all [as published] in the year 2000:

A close-to-people sermon which picks up the listener's real problems and enables him to live with them in the light of the Bible.

A mediative reading of old and modern texts of faith which stimulate thought and invite to prayer.

Music and graphic arts which help the listener or viewer to concentrate and can be an aid for conscious life.

Selfless service to severely handicapped, helpless old people, or social failures which is not compensated by money or honor but which reveals Christian motivation.

An offer of community experience in the various forms of Christian groups or circles and small or big special events which can give the individual encouragement for living through the experience of God's happy family.

It is not only a question of forms, however; it is above all else a question of the contents of the gospel, that is of the question as to whether we have really reached the core of the gospel with our interpretation and practical application of the Bible. Despite innumerable theological-philosophical-linguistic and oratorical top achievements of the Protestant churches' gospel service, one still cannot feel enough of the offer of salvation, of Jesus' decisive life's aid for every individual and the world. There is more that the church can say. Guenter Jacob said that the crucial question of Christian faith and the church is whether it translates the testimony of the New Testament into the horizon of reality of the modern world.

With the help of ecumenism, particularly as a result of the pressure of our sisters and brothers from Africa, Latin America, and Asia, our church begins with a concrete testimony to the world. The basis of our church, particularly groups of youth and young adults, have contributed to the rediscovery of the all-biblical shalom as a message to the world. The world conference of churches of Uppsala in 1968 called it the cry for peace and the call by the hungry and exploited for justice. The plenary session of the World Council of Churches in Vancouver in 1984 urgently called on churches and Christians to make every effort out of obedience to their faith for the realization of peace, the maintenance of the whole of creation, and justice. The League of Protestant Churches in the GDR and its member churches support this interpretation of the concrete mission of the church for the world. Therefore the churches oppose continuation of armament--particularly mass annihilation weapons and star war plans--and advocate dialogue, detente, and a relationship of trust between states of different social systems, while demanding that the resources freed by a stop of armament be used in behalf of the developing countries. This task will remain until the year 2000, for hopeful overtures such as the Geneva summit of November 1985 also show that a great deal remains to be done here. The churches, and particularly also the churches in the two German states, will have a growing task and obligation to look for ways of conciliation between the military alliances. No war must start on German soil; German soil must be a basis for peace. [That] is a lasting task. It is a hopeful thing to see how the concrete message of the Bible for peace and justice in the world gets hold of our communities; the year of 1985 saw a record participation of individual communities in the Decade for Peace and Justice and a record result of the Collection of Bread for the World.

There is a minus as far as the imparting of the gospel to the individual here and now is concerned. On the whole the practical application of the biblical message to the life of the individual has too little relevance for the concrete problems facing people. I hope that the spreading of the gospel by the



Lutheran Church will learn to talk more unequivocally. That becomes the more difficult part of the message, but it is just as important as addressing the whole world. For the effect of the advocacy of peace and justice in the world depends on the effort to change people facing the pulpit and the church. The target areas of the concrete spreading of the gospel to people in this country in the year 2000 are clearly apparent:

The living together of woman and man, sexuality, the family in light of increasing divorce rates and new forms of living together also of people of the same sex.

Life style and attitude of consumption in light of 1) constantly growing needs and 2) recognizable limits of raw materials, energy, water, and air.

The natural tension of coresponsibility for the productive achievements of society and participation in social decisionmaking processes in light of existing concerns about insufficient participation and not being taken seriously enough.

The testimony of the Bible can unequivocally be translated into the concrete problems here and now. The mentioned target areas include the possibility of unequivocal statements defining a framework of action. The problem of a church oriented toward preservation and the ensuring of substance will be the fear of uncomfortable words which might anger individuals or the state. The church becomes more credible when it steps across this inhibiting threshold. The ecclesiastical imparting of the biblical message concerning the concrete questions of life at the same time as a pastoral task which must become empathetic rather than loveless and must be undertaken in a manner creating confidence rather than showing off.

Gunter Jacob in 1967 in six theses pointed out to his church how it has to adjust to the upheaval in its environment as far as its structure and its mission are concerned. These tasks are basically valid for the year 2000 and in 1985 may be actualized in about the following way:

1. The work with the Bible is to be increased in order to make the spreading of the gospel and instruction concrete.
2. Young Christians should be called on to participate actively and critically already from age 15 or 16. Youth representatives should participate responsibly in every church council and every synod.
3. The practice of filling parsons' posts must distribute burdens more justly. Forgoing the filling of posts and vacancy administration [Vakanzverwaltung] (blank spots) would be a last solution to avoid over-taxing. Before this, however, there is still the possibility of smoothing out unevenness between cities and remote areas, to offer retirees the opportunity to continue working not as a favor but as by request by the church, and to open up reserves for the service of spreading the gospel from among the large field of staff in charitable service and administration.

4. The greatest reserve of the church, however, is the church elders and other willing members of communities. The possibilities of their instruction and training must be increased to enable them to interpret world reality in the light of the biblical message. Helpful overtures are the letter-of-instruction program of the Thuringian Church and the dialogue circles of veteran Bishop Schoenherr. Here the church must do more in a planned manner.
5. Community members should receive greater support when they identify themselves in their participation in production, in academic life, in cultural life, and in politics and consciously seek the best on the basis of the biblical message on constructive solidarity of town and world. Efforts of the Gossner mission are a beginning of encouragement here also through the exchange of experience.
6. The dialogue between Christians and Marxists as objective mutual information about motives and basic concepts has also begun in our country. The 1983 Luther jubilee provided cause and opportunity for this which cautiously are to be utilized further. Objectivization and understanding are the most important objectives which should be promoted at all levels and from which mutual respect and unself-conscious openness should accrue to the benefit of all citizens. Christians and Marxists are inescapably dependent on one another in this country for an unforeseeable length of time. The necessary pragmatic cooperation must be complemented by the dialogue about life, faith, and weltanschauung.

To the actualization of Jacob's theses I would like to add another couple of key terms which have to be paid attention to as regards the way of the Protestant Church into the next millennium: gathering and opening.

Gathering is necessary for people who are already Christians. They must also be reassured through traditional offers in tested forms; they must also be visited and to be asked to commit themselves up to a point of financial sacrifice.

Opening is necessary for people who are not yet Christians. They have to be able to understand what churches actually are. They need understanding, room, and patience. The church must develop forms of transition to baptism and to membership. The church must also listen carefully to determine whether it is not being pushed to new elements of the spreading of the gospel precisely from outside. The church must be open for all the troubled, burdened, frustrated, and embittered. Notwithstanding all necessary and controversial discussions with newcomers, it must however remain clear that in the final analysis what counts in the church is the message of Jesus Christ.

[Question] In your last remarks you have directed your view to the church and to the world in the year 2000. How do you assess in this context the proposals made by Mikhail Gorbachev on 15 January 1986--with the prospect of opening the third millennium in a world without nuclear weapons?

[Answer] The proposals submitted by Mikhail Gorbachev constitute encouragement for all those for whom the "race to the year 2000" is not an armament but a disarmament race. The vision of freeing the world of all nuclear weapons by the turn of the millennium and keeping the universe freed is realistic if at long last, as Gorbachev said, the "logic" of the armament race is overcome "decisively." Whoever, like us in the League of Protestant Churches, has constantly warned against the spirit and logic of deterrence and whoever, like us with the World Conference of Religious Representatives, has advocated that the 2,000th anniversary of our Lord be commemorated in a world of peace can only heartily welcome Gorbachev's proposals and call on all concerned to go in for them constructively with a new point of view.

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## On Our Cover

On our cover is a graphic artist's conception of a factory working with robots. We do not yet have robotized factories today, there is no unsupervised manufacture yet, and robots are not serving the computerized machines. We can

only report concerning any considerable industrial robot manufacture that it will begin in the future. We hope that our cover will call the attention of the readers to the fact that we intend to deal in this issue with this very important area of electronics use.

#### Interview

The representative of our editors in Kecskemet, Bela Lovas, has prepared an interview with Lajos Kovacs, chief of the development department for MEZOGEP [Agricultural Machine Factory]. MEZOGEP has reached the point in the development of manufacturing technology where it is putting robots to work beside its NC and CNC machines and laser cutters. The use of electronics in technology is not only bringing the enterprise receipts and profits, it is also creating a possibility to get its products on the capitalist market in a lasting way. For years it has been manufacturing combine driver cabs for an FRG firm. The leaders of the enterprise say that it is possible to compete with the growing requirements at suitable prices only in possession of developed technology. When we visited the factory unit in Kiskunmajsa we were happy to see that this is not only an image projected for the papers. Here in the middle of the Great Plain they take technological development quite seriously. This is how the one-time machine stations became a medium size enterprise producing more than 2 billion's worth today.

#### Control Technology

Control technology rates a special section in this issue. It contains two articles, one by Gyula Biro and one by Tibor Balogh. Gyula Biro describes the status of industrial robot manufacture or rather the robot being adopted at Csepel. (It would be good if we could have gotten an overview of the Hungarian situation, although we know that this is not easy.) The developmental work being done at the ELTE serves primarily education, but it is not a matter of indifference from the viewpoint of the future that the students, or, for the time being at least, the technical teachers are already becoming acquainted with modern control and robot technology.

#### Parts

For lack of a better place we put Miklos Palfy's article about solar elements in this column. The author is a real spokesman for the utility of solar elements, and he convinces us that sunlight will be one of the most significant energy sources of the future, in supplying electric power too. The author puts applications in the center in addition to design, pointing out that the use of solar elements could be considerable in our country even today.

#### Metrology

Andras Fekete, of the EMG [Electronic Measuring Instruments Factory], gives a brief description of an automatic printed circuit tester shown at the Budapest International Fair. The "in-circuit" testers are new only in Hungary; most of the equipment manufacturers do not use them. These devices are significant factors in the development of technology. It makes a difference in which phase

of manufacture one discovers a part or printed circuit fault. At the Communications Engineering Cooperative they even test "empty" printed circuits, since they have found that most of the faults are short circuits or breaks. It is certain that the domestic apparatus will aid the spread of this technique.

#### Panorama

Peter Horvath, editor-in-chief of our journal, has prepared a summary of robot generations. Those who read it may become informed about "robot matters" even if they knew little about them before. As we read the article we learn the basic concepts connected with robots and the most important characteristics of the several generations.

#### Interfaces

We rarely write about our Interfaces column in the substantive review. The reason for this is not forgetfulness but rather that even the editors treat these little articles and reports--appearing with the specialized articles--rather unkindly. But they contain important information. We are gratified when we hear from some acquaintance, "Say, I didn't know...", and that he had learned it from our Interfaces column. We would also be happy if the press propagandists of the enterprises would recognize that a well timed news item could only do the enterprise good--and, "God forbid", even the domestic experts would learn something about the activity of the enterprise. Is it possible that we will have to wait for this until the domestic market becomes interesting for our electronics enterprises?

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SCIENCE AND TECHNOLOGY

HUNGARY

ELECTRONICS AT AGRICULTURAL MACHINE FACTORY

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 4-5

[Interview with Lajos Kovacs, chief of the manufacturing development department of the MEZOGEP [Agricultural Machine Factory] enterprise in Kecskemet, by Bela Lovas: "A Provincial Enterprise Which Leads in Use of Electronics"]

[Text] [Question] It may be surprising to many, but the MEZOGEP enterprise in Kecskemet belongs in the "large" category.

[Answer] Our receipts are 2.2 billion forints, with a total staff of 3,000.

[Question] The way your sites are located is interesting....

[Answer] We have factory units in Kiskoros, Kiskunmajsa, Tiszakecske, Kerekegyhaza and Solt.

[Question] What are your principal products?

[Answer] Surface soil cultivation machines, storage units for grain and transport equipment for them, canning industry machines, combine driver cabs and autobus mountings.

[Question] What chief technologies and manufacturing processes do you use?

[Answer] One can find in our factory units the locksmith, welding, malleable forming (hot and cold), metal cutting, painting and assembly technologies characteristic of machine industry enterprises. The processing machines are almost all universal ones, but the mechanization of serving them is still incomplete. We began the modernization of technologies in 1981 in the parent factory by putting NC metal cutting machines into operation. Following this we moved ahead in processing fine sheet at the Kiskunmajsa factory unit by putting into operation one TRUMATAC-180K CNC sheet working center, one COLLY 90/B model NC controlled edge bending machine and one CO2 gas laser coordinate flame cutting machine.

The next step was the introduction of robot technology. With robot technology we will modernize welding, painting and hot plant stamping.



[Question] With what technology did you begin?

[Answer] Welding occupies a significant place in the machine manufacturing activity of our enterprise, we employ more than 250 at welding. But from the viewpoint of the welding operations our series size is small, so we cannot automate with special purpose machines. We think the correct direction for modernizing welding technology is flexible automation and the use of welding robots.

[Question] Could we hear about this in more detail?

[Answer] As the first step we established a robotized arc welding work station in our Kiskoros factory unit. In 1985, with the permission of the Ministry of Industry and at the expense of our own technical development fund, we acquired a Polish made MHS-150 turntable manufactured on the basis of an ASEA licence and a Polish made CO2 gas protected welding machine. With this equipment we developed a manufacturing cell identical with an ESAB A30A robotized arc welding work station at the Kiskoros factory unit in the third quarter of 1985. Operational tests have begun. The experience thus far has been good; the CO2 gas protected welding machine is the weak point of the work station, but this is only a fraction of the cost of the installation.

The robotized work station serves primarily the realization of enterprise manufacturing development goals, the acquiring of experience, and preparation for the acquisition of additional industrial robots, but it also carries out production tasks. As the next step we are now installing a point welding work station at our Kiskunmajsa factory unit, using an FRG KUKA IR 601/60 model industrial robot. We supplemented the point welding work station with workpiece grasping and turning equipment of domestic manufacture.

As a third step we are using robot technology to modernize painting technology, making use of state support. The painting line will do spray painting of driver cab panels for combines with conveyor movement. We plan to put the robotized painting line into operation by July 1986.

We put another robot into operation in the parent factory in the first quarter of 1986. Here we are trying out the first domestic arc welding robot, manufactured by the REKARD MEZOGEP enterprise in Gyor, on the basis of an Austrian IGM license.

[Question] You have also made significant progress in the area of automating metal cutting and sheet working machines.

[Answer] Within the framework of a planned developmental program we have placed the metal cutting and malleable forming technologies on new foundations during the past 3-4 years with a significant NC machine installation program. Within this framework a COLLY 906 B model NC edge bending machine was put into operation in 1981 in the Kiskunmajsa factory unit, a TRUMATIC-180 K model CNC sheet working center was put into operation in 1985, and as a further modernization of sheet processing technology we are installing this year a laser cutting machine, made by Messer Griesheim, working with a copying

procedure. As a whole the experiences with operating the machines are favorable, and it can be said that the reliability of the imported sheet working machines is substantially better than that of the domestic CNC metal cutting machines installed at Kecskemet. The TRUMATIC and the laser flame cutting machine are very expensive, they are being exploited well; the TRUMATIC and the COLLY edge bending machine are working continuously in three shifts.

The laser process serving to modernize the sheet working technology is something new even nationally. It can be used for economical cutting of metallic and non-metallic materials. Its advantages include, among other things, the high cutting speed, the small heat zone and the good quality cutting surface. There is no warping of the material, it is simple to operate and is highly reliable. An advantage compared to the TRUMATIC machine is that it does not need a forming (blanking) tool.

[Question] What sort of NC machines do you have?

[Answer] About 4 years ago we established a modern NC plant at the parent factory as part of a large canning industry investment. The fundamental factor in selecting the machines was the character of the parts to be manufactured later. At the time of ordering the machines the market possibilities of the NC machine manufacturers were still substantially better--the domestic market was less important to them--so it was not possible for us to buy a machine assortment of optimal composition.

The collective which would be serving them took care of planning the installation of the machines, ordering the tools and auxiliary equipment and starting up operation. In the first stage we installed six CNC metal cutting machines, then about a year later one CNC lathe, until the present status of the plant developed.

[Question] What sort of experience have you had during operation?

[Answer] Unfortunately it was not possible to get machines and controls of the same type, or at least different types from the same enterprise. This makes it difficult to learn machine operation and programming, but the biggest disadvantage is in organizing maintenance and in obtaining equipment connected with the technology (tool measurement devices, data recorders, tools).

It is the general experience--confirmed by the NC plants of other firms--that relatively few problems derive from programming; the programming experts master the programming knowledge well in a short time. It is not useful to make use of the programming services of an outside enterprise because of the high costs, and adapting them to local conditions is very clumsy.

There is a relatively high turnover among both physical workers and white collar employees. Finding the reasons would require an extraordinarily complex study. Among the first reasons we should mention are material incentives and the increasing attractiveness of small enterprises which have NC machines.

Partly because of personnel problems and partly for production organizational reasons, the machine use index has changed over the years. In the year following installation we succeeded in obtaining three shift operation, the present average shift number is two. Exploiting the very valuable machines is one of the fundamental goals of the leadership of our enterprise.

In the beginning we had serious problems in connection with the reliability of the machines. We found that it was useful to employ highly qualified electric maintenance workers at the engineer level, which substantially reduced the down time of several days duration. We had very many problems with the HUNOR 713 controls of the EMG [Electronic Measuring Instruments Factory]; the UNIMERIC control of VILATI caused the fewest operational problems. The NC machines are wearing out relatively quickly. To a large extent, naturally, this is a function of operation, but improvement must be attained in a number of areas. For example, more attention should be paid to preventive maintenance, the culture of the operating personnel should be raised, better attention should be paid to the effects of certain cooling fluids which dissolve paint and caulking. Because of these things the reliability of the machines deteriorates after 4-5 years, and in more than one case they have to be completely renovated by the manufacturer. Another factor worsens the problem of the relatively fast aging of the NC machines. According to the most recent survey by the SPE (Machine Tool Programming Association) the rate of purchasing new machines has slowed compared to earlier years. So the average age of the machines is increasing.

Summing up the experiences of the period thus far we can establish that although the swift development of metal cutting technology at the MEZOGEP Enterprise was accompanied by very many difficulties it did, finally, achieve the following indisputable results:

- a. The foundations for a new, modern metal cutting technology were laid, serving as an example not only within the enterprise but also for the county.
- b. The processing of parts for canning industry machines which have the complexity of a machine tool (filling-capping machines) became possible economically with the prescribed precision.
- c. Our experts got a lot of practice in maintenance, and the number of failures requiring the service of the manufacturing enterprise to repair decreased substantially.
- d. Continuous production has become well established recently and the collective of the plant is successfully solving even the most difficult technical tasks, using computer technology methods too.

[Question] And your future plans?

[Answer] The first steps in automating manufacture have been taken at our enterprise. With the described NC-CNC machines and robots we have created the possibility of developing integrated manufacture, have created the basic elements for it, but unsupervised manufacture cannot be realized in the near future, taking the realities into consideration. Our priority task today is to learn to work and live with robots, and to prepare for larger scale, economical employment of robots.

[Question] Thank you for the interview. We wish you much success in realizing your plans.

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SCIENCE AND TECHNOLOGY

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## INDUSTRIAL ROBOT PRODUCTION IN HUNGARY

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 14-16

[Article by Gyula Biro: "Industrial Robot Manufacture in Hungary"]

[Text] In a previous issue we reported that the Csepel Custom Machine Factory had purchased the license for a heavy duty robot from the Japanese firm Daido Steel Company Ltd. The report gave a brief description of its controls. A prototype of the robot will be finished next year, but the experts of the BME [Budapest Technical University] and SZTAKI [Computer Technology and Automation Research Institute] have already begun further development.

Figure 1 shows a block diagram of the MOD 304 robot control. The several units of the block diagram have been realized on 180 x 223 mm, very finely drawn printed circuit cards manufactured at a high level. The printed circuit cards are being made in the Eger factory of VILATI with the aid of the original Japanese films. At the Eger printed circuit factory, one of the best in the country, we needed all our expertise to realize the small soldering points and fine lines perfectly.

A microcomputer made up of 16 bit MOS-LSI elements forms the logic of the control. Its chief characteristics are:

- 3.3 MHz cycle time;
- 16 bit data width, 64 K bytes address domain;
- 69 basic instructions (including division/multiplication);
- 16 level, inhibitable interrupt logic;
- memory-memory transmission, 7 addressing modes;
- separated output and input buses, with bit addressing.

A standard serial line interface on the processor card provides connection with necessary data transmission or the control unit. The two memory cards made of the most modern elements are capable of satisfying the highest requirements. Their chief characteristics are:

- optionally selectable ROM/RAM ratio;
- 64 K bit density EPROM or 16 K bit RAMs;
- a Ni-Cad battery soldered to the memory protection card;

--16 K bit electrically erasable PROM memories (EEPROMs) for sequential storage.

The memory bus of the microcomputer also has printed wiring and the three cards form a highly reliable, high performance logic unit.

The other circuit cards of the control are connected to the independent output and input bus of the processor card.

The performance checking card checks the operation of the power unit; in the event of power failure or error it protects the system by immediately shutting it down.

The measurement system checking unit constantly checks the measurement elements placed on the robot--in the present version these are precision measurement potentiometers--together with the cables leading to them and in the event of a short or break it protects the machine from greater failure by shutting down. The output and input checking and testing card can be connected as desired into the card case; it checks the entire output and input bus and serves the careful adjustment or checking of the "servocards", that is the position regulators.

Five (identical) servocards make up the nucleus of the output and input system. Each of them forms a delicately movable servo drive with the measurement potentiometer and hydraulic servo valve on the robot. The microcomputer communicates the desired position on the given axis with a 12 bit digital/analog transformer. The task of the servo drive is precise positioning without tugging--sometimes with a pay load of 1,000 kilograms in its "hands." The servo cards are very carefully designed and executed units, with special attention to undisturbed operation. For this reason special power supply and (optical) galvanic isolation are used to eliminate dangerous "disturbing effects."

The digital output and input cards (two each) are logically simple units but they also are made with great care. Here also the designers "threw in" everything to preclude the consequences of the general disturbing effects in heavy operational applications. Every channel of the 16 channel cards can be checked by the check card. With a careful selection of materials (optical coupling, and an optimal combination of CMOS and Darlington transistor transmission elements) the Japanese designers strove for the greatest possible reliability. A careful separation of the logic and "load bearing" elements determines the topology of the cards. The manual operating elements of the control were developed for simplicity and utility.

The card connecting the control panel and displays is also outstanding with maximal protection against disturbance and a more general design than customary, but it is rather demanding of material from the domestic viewpoint.

The tape memory interface card connects the magnetic tape storage unit, also of Japanese manufacture (TEAC-MT2), to the system. The TEAC-MT2 is a cassette recorder developed for digital data recording for professional purposes; it can record the sequential program of the robot on a commercial magnetic

cassette for later fast loading or archiving. Recording and loading are very simply done, the time required is less than one minute, and if a suitable cassette is used it is absolutely reliable (which is carefully checked by the microcomputer anyway, excluding the possibility of reading in a data error). With the aid of the tape recorder the sequential program set of the robot (a maximum of five programs at a time) can be saved conveniently--before reprogramming--because the sequential program memory itself preserves the information despite being switched off. The speed, dimensions, performance and price of the magnetic tape memory are much more favorable than, for example, the similar parameters of punch tape stores generally used for CNC controls. The power unit of the control consists of modular commercial stabilizer units. Increased measures against network disturbances which involve using preliminary (ferreresonance) stabilization and isolation transformers and multi-stage disturbance filters can be found here as well.

The control is built into a steel frame cabinet which is completely enclosed and welded of steel sheets and has a full size door on the front. A fold-down operator's (teaching) panel and the permanent operator's panel are located in the door. The design of the teaching panel is ingenious. It is on the inside of a door which can be folded down ([and consists of] about 60 illuminated pushbuttons). The magnetic tape unit is placed in a protected place in a space behind the door. A stepping box, the pushbuttons of which move the axes of the robot in the teaching mode, aids the teaching. The 15 meter cable of the stepping box makes it possible to approach the work space for the purpose of precise positioning.

Thanks to the built-in program system the operation of the control can be mastered simply and easily--despite the fact that the control is suitable for the most complicated loading tasks (for example, loading into a stack). Using the illuminating pushbuttons of the teaching panel it is possible to put in the "sentences" of the sequential control program by number, "empty" in the first step--that is, without movement information. In the second step one can move the robot to the desired positions with the stepping box--slowing it down appropriately, while the positions are recorded for every individual sentence.

After putting in all the movement information (positions) the entire sequential program can be executed step by step or continuously, slowed down for purposes of checking or "live". The MOD 304 control is capable of simultaneously storing and running five entirely different sequential programs. One can select among the five programs by manual command, or an external signal can be used to start execution of the needed program from among the five stored programs. Thus the most complicated loading or work tasks can be performed. Considering the extraordinary load capacity of the Daido robots and their robust design (depending on the model their load capacity extends from 200 kg to 1,000 kg) and the large work space of the robots it can be stated that the Daido robot with the MOD 304 control has opened a new chapter in the area of domestic robot manufacture and use. Tasks of such volume require close cooperation among enterprises with different profiles; the Csepel Custom Machine Factory, Danuvia and VILATI have undertaken this in the interest of domestic robot technology.



### Autobiographical Note

I was born in 1939 in Debrecen where I finished general school and secondary school. I obtained my mechanical engineering degree in Miskolc in 1964 and began my career in the SZIM [Machine Tool Industry Works] developmental institute with 7 years of machine tool studies. In the meantime I graduated from an electrical engineering school and for nearly 10 years worked at the MTA SZTAKI on planning and building the first domestic integrated manufacturing system. I have been a developmental engineer at VILATI since 1980, at present working on domestic production of the Japanese Daido robot controls.

I have three teen-age children. My hobbies are the family and sports (sailing, nature walks, hunting) and, naturally, electronics.

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SCIENCE AND TECHNOLOGY

HUNGARY

# MODULAR, STACKABLE INTERFACE SYSTEM

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 18-21

[Article by Tibor Balogh: "ELTE: Modular Interface"]

[Text] The Threads Do Not Lead to the Computer...

Technical progress clearly proves that the ever broader use of computers points beyond the area of computation and logical operations. A computer is suitable for any task, if it has the proper sensing and intervention mechanisms. That is, by creating a link between the machine and its environment we make the machine capable of obtaining information about a process and then modifying the process on the basis of the information. Interface units make possible this link between the machine and the external world.

The school and educational use of personal computers has been introduced in our country as well. Thanks to the school computer program computers can already be found in most schools, and they are performing their tasks only if they are capable of doing everything which is foreshadowed in development trends. We might formulate this as a paradox: We no longer need computers--directly. The machine can retire behind the scenes, the function performed by it has become primary, the regulated physical system, the process. More and more the graphic environment, living speech and the "physical stimulus" will be characteristic in maintaining contact. For this reason it has become necessary to develop an assortment of interfaces which suits the needs, which can be used on the broadest scale with the least material or financial expenditure, and which is a many-faced teaching tool which can be used in teaching the various subjects of different levels and types of educational institutions (technology, natural science, mathematics and even the humanities).

## The Interfaces...

At present interfaces are usually special devices designed for a given situation like, for example, boiler electronics, a hatchery controlled by a computer or circuits of a demonstration model linked by a computer. So the principle realized in general is one function-one device, or one device-one function. If the interfaces are multifunctional they are often over-size in

the interest of prospective use and are immutably fixed. Building them is expensive and frequently they cannot be used. Circuits built on modular replaceable cards are a more propitious solution. Often the development of such interfaces is possible only after the equipment has been taken apart and connecting them, the electric linkage, can cause problems. And the framework puts a limit to unlimited expansion.

#### The TechnoMIR...

The TechnoMIR is a Modular Interface System developed to meet their needs by the colleagues at the General Technical Faculty of the ELTE [Lorand Eotvos Science University]. According to the patent idea they created an element assortment providing optional variation possibilities stressing the most important functional elements from the types of interfaces which can be imagined. They developed a mechanical and circuit system as a carrier for the element assortment which makes it possible to select from among the elements of the system--the interface elements--those which should be linked together--physically and logically--to meet the given need. Systems technology, economic and didactic viewpoints played a role in determining the basic functions of the elements.

The interface element itself is a circuit capable of carrying out a function. They are placed on standardized printed circuit cards of a given size which can be put together in a box in any order. Each of the elements or modules can be used separately or connected to one another--in a theoretically unlimited number, even of the same type. Because of the nature of the system the family of modules is expanding day by day. The elements prepared thus far are the following:

Clock/Counter Module--The module can be used for time measurement or timing independent of the computer or to count events (for example, number of revolutions).

Analog/Digital Transformer--The input voltage gives values between 0 and 255 with measurement limits between 0-1, 0-10 and 0-100 volts. Changing the measurement limit is done with a program. The circuit is ground independent.

Digital/Analog Transformer--A voltage of 0 and 10 appears on two channels of the module as a result of values between 0 and 255. The third is symmetrical--from -5 V to +5 V and can be loaded, for example to control the direction or revolutions of a motor.

Interrupt Receiver--The unit requests an interrupt as a result of an input signal. It stores a signal arriving to any one of the eight inputs until the computer reads it.

Analog Multiplexer--All of the six inputs are linked to an output or to the A/D transformer via the main coupling. Two inputs can accept a voltage between 0 and 100 V.

Power Unit/Isolator--Produces a voltage of plus or minus 12 V to operate those units which meet not only with the TTL levels (A/D and D/A transformers). In addition the isolation-drive circuit takes care of protection of the computer.

Since only midget voltage can be present in the system an external transformer (e.g., PIKO) must be connected to operate the module.

Digital Input--A module capable of receiving one byte, that is eight two-state signals. The state existing at the time of the query goes into the computer.

Digital Output--A module capable of transmitting one byte, that is eight two-state signals. Of the eight, four are loadable TTL level signals and four are break-short circuit connections.

Joystick Interface--A module receiving signals from two standard joysticks.

Printer Interface--Connects a D100 type serial printer to a school computer.

Construction Board--Like the Proto Board it makes it possible to build up circuits quickly on it, which is clumsy especially when using "many-legged" integrated circuits. Since the signals of the computer or the modules can be accessed (e.g., A/D module) it is possible to test both analog and digital connections.

Empty Module--The module helps those who would like to further develop the system according to their own ideas. In addition to the connectors and the box the module contains a printed circuit sheet on which any circuit can be built.

Network Module--We have created a small computer network out of personal computers with this module.

Transmission Module--Together with the network module it links the machine to the telephone network for greater distance transmission.

Processor Module--A Z80 processor in the module operates as a "slave" processor of the computer, making possible "independent" operation of the modules.

Program Module--Its primary task is EPROM burning, but it can be used to store programs frequently used to operate the other modules, similar to a cassette.

Robot Control--A module to control robots.

The modules listed here can be put together into a system carrying out a number of functions. The modules are placed in injection molded plastic boxes. These can be stacked on top of each other in only one way. The tape cable coming from the computer is positioned also, so it cannot be connected wrongly.

The function of the interface system changes as a function of the elements used, or of the their logical interconnections. We use just a few types of interfaces even for the most varied measurements, but always in a different

grouping. These are connected to one another in optional order and numbers--modularly--through the so-called main network. We can even do a number of different measurements at one time with one assortment with a suitable grouping. So the function arising is not simply the sum of the functions of the elements but rather all the connection combinations offered by the program are possible.

Perhaps a few examples will make it clearer what the general formulation means, what the system can do.

Any control task can be solved with the aid of the A/D and D/A modules, whether it be controlling the temperature of an area or, changing the sensor, constant light control as a function of outside light. If an out/in connected state is suitable instead of continuous control then the D/A transformer can be replaced with the digital output, for example when turning a heater on or off. If the sensing of two states is enough (for example in controlling the level of a fluid) then the A/D transformer can be replaced with the digital input.

With an A/D and D/A doublet one can observe digital signal transmission, sampling of the A/D from which the D/A feeds back the original signal with a band width of about 5 kHz. The A/D also makes possible speech recognition for several tens of words. With the aid of two channels of the D/A transformer we can draw any figure on the oscilloscope screen or on a wall with a laser deflection system. By using light gates with the interrupt receiver or digital input and clock module we can measure speed, acceleration or motor revolutions. Linking the D/A transformer to the motor creates a revolution control loop. With a light gate at a distance of a few meters we have an alarm system or counter device; using the clock module as well we can create a time measurement evaluator for physical education or sports events. If we link a photo diode made into a "tube sight" to the digital input module then we have a light pen. It is also possible to demonstrate an optical fiber link.

With the aid of an infra-LED connected to the digital output and a suitable program we can get remote control of TV sets and video recorders. Slide projectors and tape recorders can be controlled by the module, creating any sort of conversational audiovisual demonstration model. Institutions struggling with few resources can easily renew their supply of tools. With the analog multiplexer the simplest oscilloscope can be changed into a multibeam one, or a printer and floppy disk store can go into one cabinet, because with the aid of the network module any machine can access them.

Perhaps the most striking demonstration--in schools--of the capabilities of a computer is to control simple robots. Robots, as computer peripherals, are good examples to demonstrate controlled systems in technology. For this reason, on a commission from the Science Organization and Informatics Institute, the General Technical Faculty is working on development of a school robot. (The prototype is beyond the first tests and is in the design planning phase.) Further development of it is taking place with the support of the OMFB [National Technical Development Committee] and the Ministry of Industry. Describing this work in detail would go beyond the possibilities of this article so we will return to it on a later occasion. Here we simply call

attention to the connection between the two systems, TechnoMIR and TechnoROB. Although the system is being developed according to educational needs--load, reliable switches, cheapness, average precision--it naturally could be used in other areas too. For example, the device could be used in modeling, to control sand maps, in computerized physics, chemistry and biology measurements or in agriculture to control a greenhouse (with magnetic valves and buried moisture sensors a computer could control sprinkling and temperature and heating for a long time in the absence of humans).

#### User Friendliness...

The assortment is characterized by user friendliness and primarily by circuit solutions concentrating on function. There are various sensors--heat, light, pressure, moisture, sound, light gate switches, etc.--and various intervention organs--model motor, stepping motor, electric bulbs, LED, loud speaker, power switch, magnetic valve, etc.--all of which can be connected to the modules directly without any electrical interface. The sensors are the simplest circuit elements--diodes, photo diodes, thermistor, microphone, pick-up. The user does not have to have any professional knowledge. The microphone connection must be plugged into the same hole on the input module as the light element or transistor connection if one wants to put a sound signal into the computer instead of a light or temperature signal.

Here everything can be connected to everything--and usually something happens--without destroying the system. This principle is reflected in the external appearance of the modules too, in addition to dimensions the electric connections also are uniform everywhere. In the interest of breaking up the uniformity and, of course, in the interest of better information the connection points are identified by a color code. The system can be connected to the personal computers widely used in Hungary--the HT-1080Z Primo, ZX Spectrum, ZX 81 and Commodore-64--by simply exchanging the tape cable connectors. Thus the system (as a universal interface set expressly developed for personal computers) may fill the gap which has arisen because of the missing background for the quickly proliferating personal computers.

#### Manufacturing the System...

The Elektroskan small cooperative has begun manufacturing the system with the first 12 types of modules. The National Pedagogic Institute has the prototypes and these will soon be in the schools for tests.

With the exception of two IC's (one is Soviet the other from the GDR) the parts now used are Hungarian products. It was always an important factor in planning that the price be as cheap as possible, thanks to which each module will probably cost about 2,500 forints.

Further development is extraordinarily simple, one only has to adhere to the standard dimensions and connection surfaces. In the event of larger circuits, if necessary, the height of the modules could be whole number multiples of the present height. These could be stacked on the other modules.

A description appearing in a clasp pamphlet contains what is needed to know to

use the system. The software can be divided basically into three levels: the basic software needed to operate the modules, sample user programs, and general recommendations. The description will grow with the expansion of the system and by virtue of new ideas and experiences arising in the schools and these pages can always be added as supplements to the "clasp pamphlet."

In general we can say that the system provides a possibility for simple computer connection and control of any sort of measurement system or device, electric or nonelectric. By its nature it is suitable for carrying out complex, frequently changing tasks. It will be especially useful for instruction for computer control and regulation of school experiments, demonstrations, simulation models, processes and other equipment already existing. Its utility is increased by the fact that it can be used again and again in different roles.

#### Autobiographical Note

I graduated from the Electrical Engineering School of the Budapest Technical University in 1980, in communications engineering. I joined the SZKI [Computer Technology Coordination Institute] as a fresh graduate where I spent my time with programming. Since 1982 I have been an assistant instructor in the General Technical Faculty of the ELTE. I teach information technology or take my part in the research work of the faculty, which in my case embraces educational robots, CNC systems and computer interfaces.

In my free time I make holograms and hold exhibits of them.

#### PHOTO CAPTIONS

1. p 19. A system made up of modules.
2. p 20. The interface system and its environment.
3. p 21. Prototype of school robot and its control module.

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SCIENCE AND TECHNOLOGY

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# MICRO-SHIVA: SYSTEM FOR PREPARING FORMS

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 22-27

[Article by Janos Demetrovics, Pal Kerekfy and Mihaly Ruda: "The Micro-SHIVA Form Handling System"]

## [Excerpts] Brief Description of the Micro-SHIVA

The Micro-SHIVA system handles on the screen of a computer forms similar to the questionnaires, data sheets and cards which are well known to everyone when printed on paper. Sitting before the screen with the aid of an editing program one can determine the format, text and columns of the form. Later the data also is written in on the screen. This almost completely coincides with filling out a printed form--in the same way one can page through the form, leave out some columns and fill in the data in any order. There are two essential differences: one can write only in the designated space and errors made while filling it out can be corrected simply. The filled in forms can be printed out and the data can be stored for later queries or computations.

The system was developed by the computer sciences main department of MTA SZTAKI [Computer Technology and Automation Research Institute of the Hungarian Academy of Sciences] and already has numerous serious applications.

Our goal in creating the Micro-SHIVA form handling system was to provide an efficient tool which could be used conveniently by users and the programmers of user systems.

From the user's viewpoint we found it most essential that putting the system into operation in an institution should cause the least possible inconvenience and change when switching to a computer. We certainly had to consider that in most places one could find already developed, well operating administrative systems. For the most part these want from the data providers the filling out of forms and cards. Generally the data thus recorded is then transferred to punch cards or magnetic data carriers and processed by a computer. Screen form handling changes this only to the extent that the data appear first on the screen instead of on paper. Certain checking can be done when filling out the forms and the attention of the person doing this can be called to typos which thus can be corrected immediately without further effort. After the forms are filled out every known advantage of magnetic data recording can be exploited

(fast and precise data service, use of networks, avoiding copying errors, etc.). Later in the examples we will see that the format of the printed out forms can be quite varied so that every existing printed form can be used without change (based on official or other prescriptions or custom). The person using Micro-SHIVA can do all this in a completely interactive way; the form being used, the check conditions and the print image can be simply modified at any time, even during data input.

The form editing program is the most important tool for those preparing the user systems. With this one creates those forms which the users will fill out. One can define the location of the several columns (data fields), their length and the factors connected with checking them. Similarly one can provide a method for displaying and printing them.

The applications area of the Micro-SHIVA form handling system is very broad. It is enough just to think in how many areas of life one fills out various types of printed forms, be they questionnaires, data sheet accounts, receipts, orders, bills of lading, requests, decisions and the like. Form handling can be used everywhere where data can be entered by filling out forms or cards or where one must store data in lists or tables or make calculations from them.

The automated office (e.g., a secretarial station) is a characteristic applications area. It can be used to enter, record or print data on people or things (letters, books, technical drawings, inventory items) and is suitable for processing cards or registers. Letters, reports and decisions in any form or with any content can be printed on the basis of the data entered.

In harmony with the needs and possibilities of the applications areas we have developed the Micro-SHIVA form handling system so that it provides an efficient tool for cheap desktop computers; this is where we want to spread it and the already operating systems were realized on such computers. The present system needs are: a Z-80 based microcomputer with magnetic disk, printer and CP/M compatible operating system. Depending on the size of the task it needs about 15-30 K bytes of memory; thus special computation software and user software performing other activities can be run on the machine along with it. The systems set up so far operate on the Varyter and Syster microcomputers developed by MTA SZTAKI and the MOD-81 and MOD-81-1 microcomputers manufactured by MEDICOR.

#### Industrial Applications

Administrative techniques have their peculiarities in every area. Thus, although the user systems which can be used in the several areas have a common base, they can differ greatly from one another. This is true of the medical and pension calculation systems described. In the area of industrial applications we have developed a pharmaceutical factory laboratory system and a machine industry program package. We will deal in more detail with the latter.

The program package based on Micro-SHIVA which was prepared for the Ganz-MAVAG Railway Vehicle Factory differs from the systems described thus far in that when using the Micro-SHIVA form handling technique data traffic takes place

among databases which are substantially different from one another in regard to structure. The task of this program system is, on the one hand, to support the preparation of the so-called angle table (a listing of parts and subassemblies figuring in the blueprints) for the blueprints of parts and finished products and, on the other hand, and this is the interesting thing about this application, to prepare the so-called job booklets defining the production process, doing so without error and quickly compared to traditional solutions, going down the list of the drawings which make up a hierarchical system (product, subassemblies, parts). This job booklet contains a list of all the parts (subassemblies) needed to produce the several products or subassemblies, the quantity needed and their quality indexes. In this way this program system automates and speeds up a great deal of intellectual drudgery which is not only slow and expensive in the traditional form but also, due to the possibility of human error, can cause damage in production (poorly scheduled production, a shortage of parts or too many parts).

A working paper prepared by Ganz-MAVAG and MTA SZTAKI illustrates well with a number of examples the possibilities for using the Micro-SHIVA form handling technique. It also shows in a concrete example the operation of a user system based on Micro-SHIVA.

#### The Link Between Form Handling and the Databases

In addition to the form handling system the Micro-SHIVA system also contains a database management possibility. Form handling can also be built onto other database management systems. An example of this possibility is the special purpose correspondence (recordkeeping) system which uses Micro-SHIVA form handling as an input-output surface and uses a data management subsystem of a system originally intended for wholesale and retail enterprise inventory, shipping and billing tasks as the database.

As a final conclusion we can say that during the relatively short time of Micro-SHIVA development thus far the user needs coming from a large number of most different areas prove the utility of the development. The many types and large volume of information processed shows the efficiency of microcomputer use. As an example we might mention one of our medical systems (studying the effect of medicines) in which 15-20 M bytes of data are being processed (using floppy disk background storage) or the social insurance task in which data on about 100,000 cases must be handled in an operational way--distributed among several work stations.

#### Autobiographical Notes

Pak Kerekfy. I was born in Budapest in 1955. I completed my university studies in 1978 at the Lorand Eotvos Science University, in mathematics. Since then I have been working at MTA SZTAKI. At first I dealt with large computer tasks, with medical and agricultural applications. At present my theme is microcomputer form and data management.

Janos Demetrovics. I was born in Puspokladany in 1946. After graduating from the Ferenc Karancs Gymnazium in Puspokladany I earned my degree in 1970 at the mechanics and mathematics faculty of the Lomonosov University. I defended my candidate's thesis in 1973 and my doctor's thesis in 1981. I have been chief of a scientific main department at MTA SZTAKI since 1976. Since 1970 I have been dealing with various theoretical and practical questions of computer science with special regard to a relational data model.

Mihaly Ruda. I graduated from the ELTE TTK in mathematics and physics in 1969. Since then I have been working at MTA SZTAKI in various areas of mathematics or computer technology. At present one of my chief work areas is the development and practical application--e.g. in medicine--of microcomputer data management systems.

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PARCELLA 86: WORKSHOP FOR CELLULAR, ARRAY FORMS

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 p 51

[Unsigned note: "Parcella '86"]

[Text] The Cybernetics and Information Processing Institute (ZKI) of the GDR Academy of Sciences and the Automation Theory Research Group of the Hungarian Academy of Sciences held a workshop on cellular processing for the first time in September 1982, in Berlin.

The second workshop took place in September 1984 under similar conditions, in a slightly expanded form. The chairman of the 16 member program committee was Tamas Legendi and the co-chairman was G. Wolf (ZKI); members came from seven countries. During the 3 days 34 papers were read before 60-70 participants.

The third international workshop will take place in Berlin between 9 and 11 September 1986, under the name Parcella '86, as a central program of the GDR Academy of Sciences (ZKI).

The topics will be:

--Basic and general problems of cellular and array processing: structures-architecture, languages, algorithms, error recognition, error tolerance, test, self-correction and theoretical questions.

--Numeric applications of cellular and array structures.

--Non-numeric applications of cellular and array structures.

--Use of regular, homogeneous subsystems in various computation systems.

--Software for automatic design and simulation, verification and synthesis of cellular and array structures.

--Additional themes, such as unconventional realization of cellular and array structures, new applications areas, etc.

The time limit for submitting an abstract (200 words, one page) is 15 February 1986 (Tamas Legendi, MTA, 7 Somogyi Street, Szeged 6720). The time limit for submitting the entire paper is 15 March (Gottfried Wolf, ZKI, 33 Kurstrasse, Berlin 1086). On the application card one can request special paper and a guide for the articles. Answers by 30 May.

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#### NUCLEAR POWER PLANT SIMULATOR

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 71-72

[Article by Sandor Elo, BME Study Reactor: "BME (Budapest Technical University): Nuclear Power Plant Simulator"]

[Text] Part of the large investment at Paks was a control room which, as a perfect copy of the original, permitted the engineers to practice certain operations and to prepare for averting possible failures. Naturally the system which cost almost one billion forints could not be used for instructional purposes both for operational and economic reasons. So there was a need for a smaller, cheaper simulator. Such equipment is being developed at the study reactor of the Budapest Technical University with the support of the OMFB [National Technical Development Committee].

The development of technology today has created a number of industrial installations where expert training cannot take place during operation. A nuclear reactor, and especially a nuclear power plant, is a typical example of this.

The experts of the BME study reactor have been dealing with reactor simulation and use of simulation training from the beginning. For years there has been an analog simulator in the study reactor, but its time is past, its abilities and performance are obsolete. So it was necessary to develop the Primary Area Training Model (POM) working on a digital principle (the primary area is the innermost part of the reactor, where the thermal energy is generated).

The complexity of the nuclear power plant primary area and of the processes taking place in it made it necessary to be able to study the main pieces of equipment or the essential processes separately while it should also be possible to become acquainted with the system as a whole. This corresponds to the didactic viewpoints of instruction, operating with an analysis of the system and then with a synthesis of the results. In accordance with this the POM consists of a system of physical-mathematical models of the main pieces of equipment and fundamental processes, of algorithms suitable for digital simulation of these and of training programs. Naturally the advantages of the POM can be exploited only with a functional simulator, so they developed a technical plan and simulation programs for this.



With the aid of the simulation program system it is possible to study the reactor, the volume compensator and steam development and to study reactor kinetics, xenon poisoning and internal and external reactivity effects. It is also possible to practice starting up, stopping, normal operation and operational disturbances. The simulation can be frozen at any moment and the dynamic model parameters can be changed.

The simulator consists of three main parts: a PDP 11/23 small computer to compute the model, a microprocessor system made up of MMT [instrumentation and metrology faculty of the BME] units which manages and partly interprets the input/output processes and a Kontakta control panel. Instructor intervention takes place from the console of the PDP.

The small computer came to the institute with the support of the International Atomic Energy Agency. The MMT units purchased in the spring, including a MOD 81 microprocessor modular data collector, were obtained recently with the support of the OMFB SZKCPI [Central Program for Computer Technology]. We intend to use special purpose hardware of the MMT Association and the GRAF graphics program packages to display the process diagrams and functions. For I/O processes we would like to rely on the existing MLSP data collection and signal processing module library.

We plan to have the system, worth about 10 million forints, in operation in the school year beginning in 1987.

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#### INDUSTRIAL LASER DEVELOPMENT AT TUNGSRAM

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 p 72

[Article by Tamas Kolossa: "Laser and Screen"]

[Text] It is well known that a few years ago the Tungsram Company got into trouble. According to a decision of the State Plan Committee this could be overcome only by developing new products, the foundations for an undisturbed continuation of production had to be created by "standing on several legs." The first fruits of the decision are ripening now. In the recent past the enterprise caused a stir by advertising positions, seeking electronic experts at high pay.

Much work awaits those who come. There are things the enterprise does not want to talk about yet. But they will also meet with finished developments and the need to modernize them further will give them work to do.

The first devices from the laser development which began in the middle of the 1970's were finished in the recent past. The conditions of the large enterprise made it possible to develop carbon dioxide lasers so they chose medical and industrial applications as an area. The advantage of the carbon dioxide laser is that it loses its energy in water after 0.2-0.3 millimeters so it can be used outstandingly for surgical purposes in the human body, which has a large water content. Another essential advantage of the light beam is that it is sterile and that micro-vessels immediately seal after cutting so there is little bleeding and healing is fast. Four of the prototypes developed with the aid of the KFKI [Central Physics Research Institute] are already in operation in various hospitals and the factory unit in Kaposvar has begun manufacturing preparations. We intend to use microprocessor technology to develop further the 60 watt devices which unite vacuum technology, high voltage technology, precision engineering, optical technology and electronics; as a result of this further development the device, which is now the size of a man, will be substantially smaller. Physicians have already done several hundred operations with the laser knife.

A 400 watt laser for industrial purposes was developed for the Machine Tool Industry Works, working with several other enterprises. The equipment was demonstrated at the spring Budapest International Fair built into a CNC controlled metal sheet processing center. To the best of our knowledge this

large device, an exclusively domestic development, is unique in Central Europe. It can cut carbon steels to a depth of 4-5 millimeters and alloyed steels to a depth of 2-3 millimeters, almost without burrs. Series manufacture will begin next year and the first laser devices, difficult to sell by themselves, will be fitted to machines of the SZIM [Machine Tool Industry Works]. The chief direction for further development will be system building, in the interest of better sales later.

As one of the world's largest manufacturers of lamps the Tungsram Company is naturally striving to supply the lamp manufacturing lines planned by it with the most modern technology. Computer controls are under development. Formerly the manufacture of picture tubes developed out of lamp manufacture and many in industry use the TRT monitors. Seeing that the market for the displays needed for computers had gaps in it they started display development. As a result of the work begun last year prototypes were prepared in three sizes (23, 27 and 31 cm diameter screens) and series manufacture began in the recent past. For the time being they are offering "naked" modules, but within a few months they will offer complete boxed devices with power units, according to reports at a price attainable by amateurs. The devices working in the 15 MHz range with 1 V input and video signal have horizontal dynamic focus (the edges do not wash out). Future plans include a color version, and if we note that information displays will be common devices in the work places and even households of the future then one can understand that there are many plans--one only has to rank order the possibilities.

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MECHATRONICS: AN ALLIANCE BETWEEN MACHINE INDUSTRY, ELECTRONICS

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 73-74

[Article by Peter Bodolai, plant leader: "Mechatronics--IMI (Industrial Instrument Factory, Iklad)"]

[Text] During the Sixth 5-Year Plan in our country the technical and technological development of industry, and of the machine industry therein, progressed more slowly than planned. This fact was the consequence of numerous objective causes, but, let us admit it, of subjective causes as well. Following the achievements of the "second" (or third?) technical revolution places an ever heavier task on the technical-economic experts of our country.

It is becoming increasingly necessary to vigorously improve the level of the industrial-electronic or machine industry-electronic products, let us call them mechatronic products. It appears that this is simply a question of deciding to do so, but let us remember that carrying out dynamic technical development in the present economic situation is not at all simple. Like many of the machine industry enterprises of our economy so also the Industrial Instruments Factory came under the new economic conditions of the 1980's with its traditional manufacturing profile--90 percent of our products use electric motors.

Since these products belong among those of the industrial product registry not characterized by considerable price increases and represent a fair European level--12-15 percent of our products go to western export--their economical and even more economical production requires extraordinary efforts from the collective of our factory. We had to prepare to manufacture products and product groups which meet the technical requirements mentioned in the introduction but which also will bring suitable economic results.

It was not by chance that we joined the mechatronics program. In our well equipped tool factory unit we are capable of manufacturing quality machine industry products--mechanical products--in small and medium series. And in our experimental electronics plant established in 1984 we are striving to produce electronic units. There is now an outline plan to set up a mechatronics final assembly and testing plant as well.

We also have mutual development and applications contracts for modern products developed by the KFKI [Central Physics Research Institute] and the MFKI [Technical Physics Research Institute]. According to our plans we intend to move forward in the following directions, relying on the intellectual base of the two institutes:

--manufacture in small and medium series of computer technology peripherals not so far manufactured in our country; and

--manufacture of microwave products--many of them embargoed from the West--not yet commercially produced in our country.

In the line of computer technology peripherals we began first manufacture of the digital plotter developed by the KFKI. At present we are manufacturing the first 50 units.

The MFKI and the IMI have signed a cooperation contract to encourage civil and industrial use of microwave devices. Within the framework of this preparations to manufacture a microwave transmitter and receiver and doppler modules began in the middle of this year. Using semiconductor devices--Gunn and Schottky diodes--manufactured by the MFKI the Industrial Instrument Factory and the MFKI hope to bring to the market modern devices which are presently embargoed on the Western European market. These devices will come up to the present Western European level. Preparations for series manufacture of the NR 506H magnetic tape unit have begun also.

The goal of the mechatronics program of the Industrial Instrument Factory appears from the above--manufacture of mechanical-precision engineering products supplemented with high quality electronics. We believe that the near and distant future will require this.

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# CONFERENCE, RESOLUTION ON PARTS

Budapest MAGYAR ELEKTRONIKA in Hungarian No 6, 1985 pp 78-79

[Article by T. K.: "Bushes and Poplars; Parts Conference '85"]

[Text] Between 18 and 20 September this year, the Communications Engineering Association held a Parts Conference, primarily as an exchange of scientific experiences.

In the large hall of the SZOT [National Council of Trade Unions] hotel in Balatonfured Gyula Tofalvi, first secretary of the HTE [Communications Engineering Association] and scientific deputy director of the TAKI [Telecommunications Research Institute], greeted the participants and noted in his opening words that in recent years the manufacturers of electronic parts had had to struggle with extraordinary difficulties. What they have done is praiseworthy, but it is too little. While they have been dealing with new cultures they still have not created a background industry for the old production culture. Because of foreign exchange management difficulties, among other things, many suffered disappointment in realizing the Electronics Central Development Program. There were many failures along with a few nice achievements, many bushes surround the few "poplars."

Although electronics represents the newest culture and thus requires new investment, conditions are made difficult to a large degree by domestic investment policy. And as a consequence of the present situation equipment manufacture is not developing adequately either. Going beyond all this the parts manufacturers are developing on independent islands, scattering their forces, not only paralleling one another but often developing contrary to one another.

So in the future we must create, with substantially greater effort, a background industry proportional to equipment manufacture and parts manufacture. Much more intensive development, compared to present principles, must be carried out in the Seventh 5-Year Plan if we are to reduce our backwardness.

The first speaker after the introduction was Dr Jozsef Budinszky, a main department chief in the OMFB [National Technical Development Committee]. He dealt with the spread of biotechnology, with new structural materials, with

the role of energy, with the increasing significance of R and D activity and finally with the developmental trends of electronic equipment and systems. Janos Goblos, technical director of Remix, talked about the problems of the enterprise and the tasks of the next 5-year plan. He illustrated the increasing technological level with the reduction in the age of products, adding that they knew the plan was modest but this is how it ran.

Age of Products -----	Percentages for	
	1980 -----	1985 -----
5 years	27	34
10 years	24	32
[over?] 10 years	49	34

Their chief goals in the next 5 years are: keeping the existing technology up to level with the necessary developments, starting up manufacture of hybrid circuits (the investment will be completed by the end of the year) and introducing the new surface mounting technologies. They intend to restore by the beginning of the plan period the potentiometer development which had been dropped.

Gyorgy Wollitzer, development director of the MEV [Microelectronics Enterprise], also spoke primarily about the tasks standing before us, about the production starts to be expected in the wake of the investments of the recent past and about the development of the HCMOS line so that they can reach a resolution of 3 microns, and later 2 microns. The MEV is planning a ceramic capsule development, it needs to reconstruct its factory in Gyongyos, and last but not least there must be a more intensive spread of equipment oriented circuit use.

Jeno Fock, a member of the MSZMP Central Committee and president of the MTESZ [Federation of Technical and Scientific Associations], closed the opening plenary session. Expressing appreciation for the invitation he emphasized that this conference is outstanding for its significance among the MTESZ congresses. In illustration he said that in 1985 the communications engineering industry developed six times more quickly than the industrial average. The MTESZ has received from the Council of Ministers a draft of the Seventh 5-Year Plan law in order to offer an opinion thereon and in developing its position it will rely on the HTE as the administrator of domestic electronics within the federation.

Detailed professional talks followed the plenary session. Probably because there were few of them they also were given before the entire group. Most of the speakers in the very weak field dealt with the results of many years of development in a summary manner. Perhaps the most striking paper was given by people from the Attila Jozsef Science University about the cellular processor developed by them.

At the end of the seminar those present passed a very hard resolution which emphasized the development of parts manufacture as a vitally important government task.



Resolution of the 1985 Parts Seminar of the Communications Engineering Scientific Association

1. Approaching the end of the Sixth 5-Year Plan and of the first phase of the Electronics Central Development Program, the Seminar establishes with concern that despite the more than 10 years old social initiative of our association, the creation of the Electronics Central Development Program and a decade of agreement within Hungarian electronics professional public opinion there has not yet been the dynamic development of our electronic parts industry which the parts needs of our electronics equipment manufacturing industry, the other branches of the people's economy and certain areas of the social environment would require.

In the past 5 years, despite the prescriptions of the Electronics Central Development Program, the domestic supply of electronic parts has deteriorated further, a situation created jointly by the backwardness of our electronic parts industry, the economic and foreign exchange problems of the country, the present level of cooperation among socialist countries and the spread of the embargo.

In connection with this it must be established with sorrow that the goals put forward in the Electronics Central Development Program, the initial goals of the Sixth 5-Year Plan, were realized only in part.

Comparing the partial achievements of the current plan period and the dynamic development which has taken place in world electronics it can be established that despite the government program the relative backwardness of our parts industry increased further.

2. It also creates concern in the professional public opinion of the Seminar that the program version worked out for the Seventh 5-Year Plan period as the second phase of the Electronics Central Development Program, a version recommended for adoption after having been reworked many times, does not undertake a swift elimination of the backwardness of our electronic parts industry and again only contains a program which will not make possible our approach to the electronic development of the world.

More than a decade ago--in 1974, after the Parts Conference in Pecs--our Scientific Association worked out a position in principle which was submitted to the leading bodies of the country and the conception formulated therein is still timely. Starting from this we continue to feel it necessary to realize a dynamic electronic parts industry development program which is able to liquidate our backwardness within a short time. In addition we continue to feel it necessary to have a comprehensive, selective development of our entire electronics industry if we want our electronics industry to be able to play its economic, social and political role.

3. One can expect that substantive and qualitative improvements will take place in the cooperation among socialist countries within a few years. We feel

that these favorable changes in the area of electronics can be pursued primarily by those countries which have a background industry proportional in size and level with their electronic equipment manufacturing industry and the electronic parts needs of the country.

The lack of this will cause disadvantageous positions in any relationship, will make us dependent on others and will create obstacles to cooperation, which will endanger not only the further development of our entire electronics industry but also will endanger the development of the products of the other branches of the economy using the products of our electronics industry.

4. The experiences of the last three 5-year plan periods and especially of the Sixth 5-Year Plan now ending and also the experiences of the electronics development which has taken place in other countries of the world prove that a suitably dynamic development of the electronics industry can take place in any country only with definite state aid. This applies especially to the background industry. Without state intervention and aid of this nature and level the backwardness of our electronic parts industry cannot be eliminated.

5. The Seminar requests the president and first secretary of our association to represent our Scientific Association in the spirit of this resolution in every question dealing with the spread of electronics....

Balatonfured, 20 September 1985

Dr Gyula Tofalvi, first secretary of the HTE

Ferenc Brada, chairman of the primary materials and parts department of the HTE

8984

CSO: 2500/219

SOCIOLOGY

CZECHOSLOVAKIA

# DUPLICITY IN EDUCATION REVEALED

Bratislava PRAVDA in Slovak 14 Feb 86 p 4

[Article by Jozef Gavlak, school teacher, Kosice]

[Text] Many of us who are involved in the process of educating the young generation know from practical experience that we are not always and everywhere successful in teaching our children to accept the principles of a socialist way of life. We are stymied by the contradictory influences of family and school education.

Where should we look for the reasons of the frequent contradictions between education in the family and at school? In the first place, in the petty bourgeois lifestyle isolating children and youth not only from our society but also from their friends. School children who are brought up in such families appear in the classroom collectives as selfish show-offs who seek to be different from the rest by their behavior.

Many teachers often witness the boasting by pupils about their vacations at the seashore, their praise for certain places in the West, their haughty bragging about the contraband that their parents brought back or are bringing back, etc. It is appropriate for parents to demonstrate their lifestyle by improving their living conditions. However, it is very dangerous when they try to persuade their children that only consumer goods and material values are of importance. Nobody can object to the idea of people owning their country bungalows or family homes if such properties are the results of honest work. However, we must firmly oppose the idea that property should be the central focus of life. And we must educate our pupils in this spirit.

We are still encountering differences in teaching world opinion. In our schools we educate our children in the spirit of a materialistic world opinion, but at home -- true, not in all families -- they are educated on the whole in the opposite direction, and hold an idealistic world opinion. When education occurs in this way we see the growth of an individual with two faces, an individual on whom we cannot rely because he is not sincere. The difference between the family and school begins with the attitude of parents toward teachers. There are parents who value a teacher according to the grades he or she gives their children. When the child brings home good grades, the parents praise the teacher. But in the opposite case, they talk

disparagingly about the teacher in front of their children. It often happens that parents believe every possible excuse made by the child instead of evaluating and objectively judging the facts in the case. Parents must be aware once and for all that such unobjective purposeful criticism as well as a search for ways to favor a pupil reduces the teacher's authority in front of other pupils. But where should one look for the solution of the unhealthy relations between family and school education? In the first place, in the consistent application of the degree concerning the parent-teacher associations. Hence, it is up to the parent-teacher associations to work out a program which will be in accordance with school policy and communist education and which would ideologically blend the educational effect of the school and family to the fullest extent. Only in this way can the parent-teacher associations fulfill their tasks and help in eliminating various abuses.

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SOCIOLOGY

GERMAN DEMOCRATIC REPUBLIC

# INCREASE IN MARRIAGE BROKER SERVICES REPORTED

West Berlin DER TAGESSPIEGEL in German 16 Mar 86 p 3

[Article by Michael Mara: "How Lonely GDR Men Can Find a Mate"]

[Text] "Young woman, 28, 1.72 m, divorced, slender, blond, with varied interests, 3-year-old son, seeks realistic partner with enterprising spirit for harmonious family life." Advertisements for someone to get married to are published day in and day out in GDR newspapers and magazines. The standard flood of advertisements has increased in the past few years. Small wonder, for in the GDR more than a million people over 30 are single, widowed, or divorced.

Divorces, incidentally, have continued to increase in the socialist German state. In 1984, for the first time in the history of the GDR more than 50,000 marriages were dissolved by court judgment--twice as many as 25 years ago. At that time, according to statistics, there were 14 divorces per 10,000 GDR citizens; now there are 30. By comparison, the divorce rate in the Federal Republic, with 20 divorces per 10,000 people (1983), is one-third lower.

In light of the great number of people on their own, GDR sexologist Dr Siegfried Schnabl repeatedly has advocated the establishment of a computerized marriage partner service. Such services are successful in other socialist countries, but the authorities in the GDR so far have not seen their way clear to take such a step.

They appear to be adopting a more liberal attitude toward the procurement of marriage partners, however. Thus a private marriage broker in Leipzig recently was granted a license. Her institute, called "Briefclub 85" [Letter Club 85], has been enjoying increasing popularity. The owner, Christine Gentsch, a former secretary, reports that more than 1,000 people seeking a partner responded to a single advertisement by the club. As documented by letters of thanks, already in the first half year of its existence the Leipzig enterprise has brought together numerous persons seeking a partner.

The Briefclub also wants to help handicapped people in their search for a mate. The procedure is simple. Interested persons conclude a contract with the club for 3 months, making known their wishes as regards a partner and

their personal data. The data are included in anonymous lists which are sent by the club to its customers. Not before a client decides that he would like to get in touch with another does he reveal name and address.

In addition to the private marriage broker service in Leipzig there exist two further such institutes in the GDR, including the "Briefbund Ruth Hoffmann" [Ruth Hoffmann Correspondence Association] in Thum in the Erzgebirge, which has been in existence for more than 30 years. The founder, who recently retired in her mid-sixties, arranged thousands of marriages in that period. Even "national prize winners" of the GDR have used her services, Mrs Hoffmann says. The state authorities granted someone on Mrs Hoffmann's staff permission to continue the oldest GDR partner institute. The new owner, when interviewed, stated that she and the women helping her had their hands full. For reasons of capacity, her "Briefbund" was able to take care of only 3,000 women members. Quite a few women had to wait for a vacancy. Unlike the men, the women have to pay a small fee.

It is not to be ruled out that further private partner clubs will be established in the GDR. The state authorities have stated that they will be liberal in awarding licenses of all kinds of there is a relevant need and it is to the advantage of the population. As the great demand in the existing establishment shows, this is true of marriage partner services.

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SOCIOLOGY

GERMAN DEMOCRATIC REPUBLIC

RACIAL DISCRIMINATION, RELATED HYPOCRISY REPORTED

West Berlin DER TAGESSPIEGEL In German 2 Mar 86 p 56

[Article by Michael Mara: "'You Surely Have No National Pride'"]

[Text] Hardly a day passes when GDR media do not have something to say about discrimination against foreigners and xenophobia in the Federal Republic. However justified this criticism may often be, such phenomena are not entirely unknown in the GDR. This is not discussed in public, though, for this delicate subject does not fit in with the image of a "better Germany."

Remarkably the prejudices and "national conceit" of GDR citizens quite often are directed against the "fraternal peoples." For instance, the reason given why a number of socialist countries have a lower living standard is that the people there are "lazy." At the height of the crisis in Poland one could hear people in the GDR way reproachfully that "for a start, the Poles have to learn to work." The Soviet friends too quite often are the victims of disparaging and deprecatory judgments.

Though there are only a few thousand "guest workers" in the GDR, they now and then are confronted with certain phenomena of "national arrogance." Despite the fact that the GDR portrays itself as an outright opponent of any kind of racial discrimination and makes a big propaganda play about the concept of solidarity with black liberation movements, people of a different color do not always have an easy time in the GDR. This reaches a point where GDR citizens who have adopted black children are reviled.

"Why don't you have them make you a yellow one for a change?" and "You surely have no national pride"--these impertinent remarks, for example, were addressed to a mother in the GDR who had adopted two black babies. She reported to a newspaper published by the Eastern CDU that such reactions had driven her and her husband to "real despair." Her two black children, she wrote, found it "very hard to put up with the "meanness and rejection" of individual contemporaries.

Particularly Mrs L., according to what she says, is being brutally reviled again and again. She therefore often "bristled" when she was out alone with her children. These, unable to defend themselves, were adopting the same attitude.



Remarks like "scram, this is a clean playground" are inflicting "almost irreparable wounds" on their children, the parents say. In the presence of the children, they often had to listen to advice like "Be careful, who knows what such blacks are capable of." Even at a government office, the mother once met with the "frightened reaction" of "Oh, this is a foreign child!"

The couple thinks its experience is not an isolated case. Mrs L. says she observed on various occasions "that in a store, for example, an African woman is treated by a saleswoman as if she did not exist." The main reason why she is appalled at this, Mrs L. says, is that "this of course contrasts with the great solidarity being practiced in this country vis-a-vis African, Asian, and Latin American countries."

Meanwhile, the parents say summing up, they have formed a notion of the "fear which deters mothers from living together with a black child of their own." Though they had adopted the children, they were "constantly confronted with things they had not thought possible." The couple thinks that there ought be more public discussion in the GDR about this "so that barriers that continue to exist here can be removed."

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END